

## Moths primed to bite into SA weed problem

Thousands of moths from Spain, France and South Africa will be released in South Australia over the next four months in a bid to combat two common species of weed.

Boneseed is a weed found throughout the Adelaide Hills, while horehound covers an estimated 20 million hectares of South Australian land, including pasture.

Control methods such as spraying herbicide or simply pulling the weeds out by hand are costly in terms of time and money and have proven ineffective, particularly where the weeds occur in native vegetation.

Instead, a biological control method is being sought—in the form of moths and their larvae, which eat the weeds.

PhD student Craig Clarke, a researcher with the University of Adelaide's Department of Crop Protection and the Cooperative Research Centre for Weed Management Systems, is studying the effectiveness of two species of moths—the bitou tip moth and the horehound plume moth.

"Boneseed and horehound are weeds that were introduced to Australia, and although it's unlikely that we'll ever eradicate them completely, we're trying to restore the balance," Mr Clarke said.

"Hopefully with these moths we can begin to control the weeds and allow native vegetation in those areas to become more dominant."

The bitou tip moth and the horehound plume moth have been tested in previous years in South Australia but failed to control the weed problem.

Mr Clarke believes the failure could be related to South Australia's climate, and he's now testing different strains of the same moths to see if they have any impact.

"The original strain of bitou tip moth, which eats boneseed, is from the Natal Province in South Africa. But Natal has a sub-tropical environment equivalent to Brisbane and the bone-

seed that grows there is very lush, unlike the boneseed you find here in Adelaide," Mr Clarke said.

Mr Clarke is testing a strain of bitou tip moth from Cape Town, which has a similar climate to Adelaide. The boneseed around the Cape Town area is very poor quality for most of the year, as it is in the Adelaide Hills.

"I've released one hundred bitou tip moths already at Brownhill Creek, and those early tests have shown that the strain of moths from Natal Province have simply disappeared," he said.

"But the moths from Cape Town have done very well, establishing themselves in the area and eating the boneseed.

"That indicates the Cape Town strain of bitou tip moths, which are better suited to this climate, will be more effective in the Adelaide Hills than the Natal strain."

As its name suggests, horehound plume moth feeds on the horehound weed. Mr Clarke is testing three different strains of the moth in areas such as the Flinders Ranges.

"There's the original strain of horehound plume moth, which was taken from the south of France and has been reared in a laboratory for the past eight years, there's a newly imported French strain of moth, and a Spanish collection from a semi-arid region in central Spain.

"So far the moths bred from the original French strain are doing very poorly, possibly because they're so used to being in laboratory conditions. But the Spanish strain is doing very well, once again because it seems better suited to our climate," Mr Clarke said.

Mr Clarke, whose research is being supervised by Associate Professor Rick Roush (Department of Crop Protection), will release more than 8000 moths at 30 sites around South Australia over the next four months. The results of his research are expected to be known in 1999.

—David Ellis



Above: Craig Clarke in his laboratory. Below: One of the thousands of horehound plume moths which will help fight a common biological menace. Photos: David Ellis



## Adelaide GSM among top in the Asia-Pacific

*"The premier school in South Australia. Its graduates can count on high salaries."*

The University of Adelaide's Graduate School of Management (GSM) has been ranked among the top 25 MBA Schools by *Asia, Inc.*, a leading business magazine in the Asia-Pacific region.

In its September 1997 edition, *Asia, Inc.* says the University of Adelaide's GSM, which runs the MBA program, is "the premier school in South

Australia. Its graduates can count on high salaries."

This year is the first time the University has been included in the *Asia, Inc.* survey of business schools throughout the Asia-Pacific region.

GSM Associate Director (Academic), Dr Laubi Li, said the high standards of the Adelaide MBA, coupled with the School's close relationship with the business community, its outstanding facilities, and the performance of its graduates in the workplace had all contributed to the positive assessment by *Asia, Inc.*

The University of Adelaide's MBA is one of the oldest in Australia. It has been substantially consolidated and continuously improved since the inception of the Graduate School of Management in 1983.

It is a general management program with a strong strategic emphasis, focusing on business within a dynamic globalised economy, and with a special focus on the Asia-Pacific region.

*Asia, Inc.* assessed 73 universities from 13 Asia-Pacific countries, and formed the ranking based on the quality

of incoming students, quality of education and the 'market value' of students.

The magazine also interviewed intending students and graduates, deans and large companies with MBA recruitment programs.

Universities from Australia, Japan, India, Hong Kong, Singapore, Thailand, New Zealand, Pakistan, Malaysia and the Philippines were among the top 25 MBA Schools.

Australian business schools took nine of the top 25 rankings.

—Pat Cree

### INSIDE

In this issue we present the second in a series of thematic features which will appear every few months. This feature focuses on working with business and industry. See pages 5-8.





## Funding our future, finding our future

One of my great concerns is that academics in Australian universities are busy—far busier than they should be.

Over the years our funding has declined through cuts to the operating grant and through inadequate research infrastructure support and capital funding. There have also been new demands on academic time, much of which is now spent on increased administrative reporting required by the State and Commonwealth and on applying for various forms of funding.

Indeed the research system places a great load on researchers; they must apply frequently for relatively small sums of money with relatively small chance of success. This competitive funding regime places undue emphasis on writing proposals as opposed to writing papers or producing other scholarly outputs.

It was with this in mind that I shaped the proposal for funding higher education research which I put to the "Funding our Future" Conference last week.

I suggested we should move to a regime in which researchers apply to a national body—in Australia's case it would be the ARC or ARC in combination with NHMRC—for international peer review grading (0-5) of the quality of their research over five-year periods.

Each researcher who achieves a grading would then be allocated an annual grant for five years with the amount being determined by the grading level and the researcher's discipline.

This funding could be used for a variety of expenses including above-award salary loadings for the researcher, buying teaching relief up to an approved level, travel, paying for laboratory equipment and consumables, and providing research scholarships to support research. The researcher's university would receive a grant to provide infrastructure to support the researcher.

Such a scheme would give researchers a guaranteed minimum level of funding to support their basic research and at the same time would provide the national system with an outputs-based mechanism for monitoring higher education research performance.

The system of individual ranking would be supplemented by a system of research grants that allowed for the funding of very large and expensive projects and provided support for major collaborative research.

But such changes are only part of a much bigger picture that still needs to be painted, both locally and nationally.

It is important to define what we want in the future, to decide what is acceptable and what is not. Success in the future will require changes to the Government's funding schemes and will depend on a rethink of our work practices.

Indeed we will need to change many aspects of the national higher education system and of the University as we know them in the late 1990s if we are to have a bright future in the late 2010s, let alone a great university by 2022. And time and funding for core skill activities are a crucial part of these changes.

MARY O'KANE

## GUEST COMMENTARY

### A portrait of the leader as an artist

Dr Anita Donaldson, Dean of the Faculty of Performing Arts, attended Harvard University's Management Development Program in July. She reflects on some of the issues raised during the program, and considers a few applications to the University.

by  
**Dr Anita Donaldson**  
Dean, Performing Arts

There we were: 122 or so people holding middle-management positions of various shapes and titles—Assistant and Associate Vice-Presidents and Provosts; Directors—of College Relations, Multicultural Advancement Programs, and Centres of Leadership; Deans and Associate Deans, Chairs and Heads (of Colleges, Divisions, Faculties, Schools and Departments of Advancement Studies, Professional Programs, Fine Arts, Arts and Sciences, Health and Human Services, etc., etc.)—lined up in neat rows in a large lecture room, bold name-cards signalling loud and clear that fading quietly into the shadows was not going to be an option during the two week period!

At first glance, the program might have appeared fairly mundane. However, the case-study approach and the teaching itself (most staff taught as though possessed!) ensured that each of the topics was prodded, poked and unravelled from as many different perspectives as possible. Not unexpectedly there were few definitive answers: ultimately you drew on your own situation within its specific context, and explored it in light of the different scenarios presented, to find 'best' fit (or its opposite!).

The curriculum included financial management ("the bottom line's important ... BUT ... always follow the money!"), legal issues in higher education, re-engineering (a dreadful word that seems to have found its way into local use!), transformational learning (intriguing: peeling away the layers that underpin your "Big Assumptions"—those resolutely held, immutable principles (with a big P)—to reveal a very personally-grounded starting point), cultural diversity, and human resource management, among others.

Given the state of Enterprise Bargaining II at the moment, the sessions on human resource management (aka performance appraisal, tenure, probation and compensation/merit pay) were of particular interest, with two key issues coming to the fore. First: while institutions everywhere had taken up the cause of formalised performance appraisal/management with great enthusiasm, there was in fact contradictory evidence as to its benefits. This then raises the question of whether an institution should commit extensive resources (both time and money) to such an exercise, and whether there are other—less apparently "big brother"—ways of achieving the desired outcome: informal appraisal (an improved review planning process perhaps?), better working conditions, release time, conference attendance/travel, etc. Ultimately however, performance improvement comes down to the human dimension: the intrinsic rewards that derive from an institution valuing its people and what they do, and acknowledging that in tangible ways (which are not always monetary); and of those people having a sense of belonging and shared ownership.

Secondly—and again having both human and resource implications: performance appraisal has to do with people, their sensitivities and sensibilities, and so requires high levels of skill and know-how on the part of the relevant managers—regardless of their level. So quality preparation and training is an absolute given in any form of performance management ... appraisal ... improvement ... or "staffing for a strategic future"!

This emphasis on the human dimension ties in neatly to the theme that wove its way subtly but insistently throughout the two week period: leadership and management as a holistic enterprise—one that embraces not only the rational, practical dimensions, but the human and artistic (or spiritual, if you prefer) dimensions as well.

This holistic perspective derives from the Bolman and Deal (1997) model which identifies the organisation/institution as functioning within four interrelated—but often conflicting—parameters: (i) the structural (the "factory"—the form, function of, and relationships between, the various constituent parts); (ii) the political (the "jungle"—the various competing/conflicting demands/claims/groups within the institution); (iii) the human resource (the "family"—the needs, skills, feelings etc. of individuals); (iv) and the less readily definable symbolic (the "theatre"—the cultural and spiritual elements that underpin understanding, meaning, values and practices, and are

embodied in ceremonies, rituals, symbols, myths, etc. ).

The theory behind the four "frames" (Bolman and Deal's metaphor signifying both "windows on the world and lenses that

bring the world into focus"), is that each affords its own image of reality, and 'colours' the 'reading' of an event/situation/decision accordingly. In essence then, organisations—in this instance, the university—are a complex web of simultaneously existing multiple realities and meanings, and effective leadership/management (whether solo or collective) needs to take these multiplicities into account when steering the best—most effective/constructive/productive—way through the decision-making maze.

Although space does not permit going into detail, it would be interesting to look at the more controversial recommendations of the Penington Report (and indeed Enterprise Bargaining II ... in fact any decision which heralds significant change in the status quo) in the light of the various frames. The objections to a number of them may be better understood as a consequence, and understood in a context other than that perceived as recalcitrance of a wayward kind!

But the notion of frames goes beyond the shaping of decisions per se. Effective ('wise', 'good' or any other synonym you may choose) leaders/managers function in the context of the four frames as the norm: they initiate and implement constructive structural change; they act as catalysts and facilitators who motivate and empower those working with and for them; they build positive links, and situate themselves and the institution to best political advantage; and they are passionate, visionary and inspirational, leading through the changes and challenges of the present into a bold, new future.

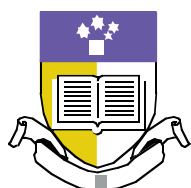
And just in case I'm taken to task for putting a somewhat rose-coloured tint on my frames, I point out a BFO ("blinding flash of the obvious", as one lecturer put it): there are negative, destructive sides to every one of the positives mentioned: the pedant hung up on hierarchies of power and authority; warring factions that paralyse action; political alliances used for self-serving ends; the slavish call on past values and practices to protect the status quo and obstruct change. But ... recognising these somewhat more machiavellian dimensions is no doubt all part of the wisdom of good leadership!

Bolman and Deal also make the point that while the structural, political and human resource frames are very much the managerial "bread and butter", the symbolic frame tends to be given rather short shrift—possibly because it has to do with the less definable, more value-laden and spiritual dimensions of leadership. Yet at a time of great change and uncertainty, it is this frame that assumes greater significance: drawing on deeply embedded cultural values and practices, it is the thread of continuity and stability that anchors change to something known and understood.

But where then does all this lead? According to Bolman and Deal, the ultimate measure of leadership lies in its artistry: on the ability of the leader to move between the frames and transcend their boundaries: to reframe experience, and "to interpret ... and express it in forms that can be felt, understood, and appreciated by others ... the artist [ipso facto the leader] reframes the world so that others can see new possibilities" (p.17). Thus flexibility, integration, expressiveness, communication, and creativity—all elements of the artistic—can be added to the list of 'leadership essentials'.

And finally—what might the 'new age' leader look like? Back to Bolman and Deal again: "Such leaders will be playful theorists who can see organisations through a complex prism ... be negotiators able to design elastic strategies that simultaneously shape events and adapt to changing circumstances. They will understand the importance of knowing and caring for themselves and the people with whom they work. They will be architects, catalysts, advocates, and [visionaries] who lead with soul" (p.380).

Reference: Bolman L.G. & Deal T.E. (1997) Reframing Organizations (2nd edition). San Francisco: Jossey-Bass.



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John Edge  
Editor

Julie Ryke  
Layout

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**Writers**

Patricia Cree  
David Ellis  
David Washington

**Contributors**

Elizabeth Butler  
Adrienne Eccles  
Geoff Sauer

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Room G07 Mitchell Building, South Australia, 5005. Tel (08) 8303 5174; Fax (08) 8303 4838; Email: jryke@vco.adelaide.edu.au

WWW: <http://www.adelaide.edu.au/Adelaidean/home.html>

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# Inaugural Lectures return

The Vice-Chancellor, Professor Mary O'Kane, has decided to reactivate the concept of an Inaugural Lecture series for new professors in the University.

Since the series was last held in 1993, a significant number of professorial appointments has been made. Reactivation of the public lecture series will provide an opportunity for members of the University community and the general public to learn about the research interests of the University's newest professorial staff.

The Librarian, Mr Ray Choate, is

organising the new series, which will be held each semester in the Barr Smith Library's Ira Raymond Room.

The first two lectures in the Spring 1997 semester are scheduled to occur over the next fortnight, with full details of the remaining lectures to be announced shortly.

They are being presented by Professor Tom Shapcott, Professor of Creative Writing, and Professor Margaret Sedgley, who holds the Chair of Horticultural Science.

Professor Shapcott's lecture, on "Teaching Creative Writing within a

Literary Culture", is on Thursday 11 September at 6.30pm and is being co-presented by the Cornell Chapter of the Alumni Association.

He will be followed by Professor Margaret Sedgley on Wednesday 17 September at 5.15pm. The title of her lecture is "Plant Liberation".

The Wednesday 5.15pm timeslot is expected to be the normal time for all subsequent lectures in the series, and each will be followed by refreshments and the opportunity to discuss the lecture with the presenter.

—John Edge

## PGSA names Supervisor of the Year

Dr John Noye from the Department of Applied Mathematics was named "Supervisor of the Year" in a presentation ceremony organised by the Postgraduate Students' Association on Friday 29 August.

The annual award is presented by the PGSA to recognise outstanding supervision. Eleven staff were nominated for the award this year. Dr Timothy Doyle from the Mawson Graduate Centre for Environmental Studies was runner-up, while Miss Mary Brownlee from the Department of Education won a special President's Award.

The awards were judged by the President of the PGSA, Ms Jill Thorpe, its Women's Officer (Helen Kavanagh) and Treasurer (Donna Hayes), Christine Ingleton from the Advisory Centre for University Education (ACUE), the Union's Student Welfare Officer Chris Gent, and a previous winner, Dr Tony Winefield from the Department of Psychology.

"Because of the financial constraints postgraduate students have been placed under since 1988, we



L to R: Dr John Noye, Ms Jill Thorpe, Miss Mary Brownlee, Professor Ieva Kotlarski, and Dr Timothy Doyle. Photo courtesy of PGSA.

feel it is now more important than ever for the University to listen to students and to recognise the supervisors that have been singled out for commendation," Ms Thorpe said.

"[Students] may not have any choice in a fee-paying future. But

they do know a good supervisor when they get one."

The Supervisor of the Year awards were presented by the Acting Deputy Vice-Chancellor (Research), Professor Ieva Kotlarski.

—John Edge

### EB: draft agreement expected soon

The University of Adelaide enterprise bargaining team was hopeful that meetings with the unions late last week would lead to a draft enterprise agreement.

At the time the *Adelaidean* went to press, the Deputy Vice-Chancellor, Professor Doug McEachern, was hopeful that outstanding academic issues would be finalised in the latest round of meetings.

He said that details of the agreement relating to general staff were nearing completion, but further work was required on those clauses relating to academic staff.

"I expect that a draft agreement will be made available to all staff in the near future," he said.

### Music Education Concert

Music Education students in the University's Bachelor of Music course will present their annual Music Education Concert on Friday 19 September at 7.30pm in the Scott Theatre.

Tickets at \$8 (\$5 concession) are available at the door.

## Fun and learning planned for University Open Day

The University of Adelaide's Open Day—which is to be held this year at the Roseworthy Campus on Sunday 19 October—is shaping up as a day of fun and learning for the whole family.

All Divisions will be involved in a major Careers Expo which will enable prospective students of all ages to find out more about the full range of University of Adelaide courses and where they lead.

Other activities will range from lectures and laboratory displays to the acclaimed 'Horses in Action' display by students of the Horse Husbandry and Management course. This spectacular 40-minute event will be held four times on Open Day and is expected to draw a large audience.

Associate Professor Mike Tyler and his frogs will be taking part, while those interested in wine will find plenty of learning opportunities with educational wine tastings and a range of other activities.

Farm tours, an animal nursery

and a hayride are planned.

The University's Aboriginal and Torres Strait Islander unit, Wilto Yerlo, will host a Bush Food Feast. There will be sausage sizzles, three Food Courts, gourmet treats and Devonshire teas, plus a musical feast.

Co-conveners of the Open Day working party, Schools Liaison Committee chair Dr Chris Dawson and ANRS Associate Dean (External Relations) Phillip Stott say the Open Day is a great opportunity to obtain an overview of the whole University, as well as gain a greater understanding of the outstanding teaching and research activities conducted on the Roseworthy Campus.

The University Open Day will run from 10am-4pm on Sunday, 19 October. To reach Roseworthy Campus, take the Main North Road and the Gawler Bypass, then follow the signs to the campus where parking will be available close to the Open Day activities.

—Patricia Cree

## The News IN BRIEF

### MATHS MEDALS MOUNT

Although the Olympics are still three years away the Department of Pure Mathematics is already in amongst the medals.

This year Dr Christine O'Keefe won the Hall Medal of the Institute of Combinatorics and its Applications (ICA) and Dr Michael Murray was awarded the Medal of the Australian Mathematical Society.

The Hall Medal recognizes an extensive and significant body of research work of exceptional quality by members of the ICA who are in mid-career. At most, three Hall Medals per year may be given.

The Australian Mathematical Society Medal is awarded by the Society yearly for distinguished research in the mathematical sciences to a mathematician under forty years of age.

The Department of Pure Mathematics at Adelaide has two winners of the medal—Dr Murray and Professor Mike Eastwood—ranking it equal second with the University of Melbourne and the University of New South Wales, behind the Australian National University, with six medal winners.

Another medal winner, Professor Leon Simon (presently at Stanford University) was an honours graduate of the Department.

### MODERN DANCE DIVA

The University of Adelaide's Department of Dance is hosting "An Evening with Australia's Most Beautiful Modern Dance Diva" in the Madley Dance Space on Saturday 13 September at 7.30pm.

Elizabeth Cameron Dalman founded the Australian Dance Theatre and was its first Artistic Director (1965-75). She recently received a National Dance Award for a Lifetime Achievement in Dance.

She has been Lecturer-in-residence in the Department for the past month and will join with the Department's Ronin Dance Company to present "This Train", one of the ADT's signature pieces, which she created in 1965 to the songs of Peter, Paul and Mary.

She will also perform some recent solos, including "Lake Icon" "Passing on..." and excerpts from "Singing the Silence", inspired by the life of Saint Cecilia.

• Tickets \$10/\$8; bookings 8303 3811. Limited seating.

### WEST TORRENS THEBARTON SCHOLARS

Four University of Adelaide students were among thirteen students resident in the City of West Torrens Thebarton who were presented with 1997 Max and Bette Mendelson Foundation University Scholarships last month.

They are Lynelle Beinke (Bachelor of Science Honours), Cameron Bracken (Bachelor of Science), Wendy Leadbeater (Bachelor of Engineering in Chemical Engineering), and Adam Zaknic (Arts/Law).

The students received their awards from the Governor, Sir Eric Neal, in a ceremony at the City of West Torrens Thebarton Civic Centre.

The scholarship scheme was developed with the support of a bequest by long-time City of West Torrens residents Max and Bette Mendelson, which built upon an earlier scheme inaugurated by the Council in 1992.



# Honorary degree recognises career of service

Ray Whitrod has won many awards during his distinguished career as a police commissioner and advocate of victims of crime. But he says the Honorary Degree of Doctor of Laws presented to him last month is one of the most special awards of his life.

The Australian National University conferred the degree on Dr Whitrod at a ceremony held at the University of Adelaide late last month—the first time such a ceremony had been held away from the ANU's Canberra campus.

However, the venue was appropriate. ANU Vice-Chancellor Professor Deane Terrell has close connections with the University of Adelaide. He holds a Bachelor and Master of Economics from this University and was the 1959 Rhodes Scholar. He was a member of the University's academic staff and a renowned University sportsman. Dr Whitrod, 82, is studying for a PhD in psychology at the University and is a former Residential Scholar.

"This award was probably the most significant to me, because it seemed to be granted on the basis of a wide range of aspects of my career that haven't been recognised before," said the former Papua New Guinea, Commonwealth and Queensland Commissioner of Police.

Professor Terrell said the honorary degree was awarded "on the ground of his distinguished creative contributions in the service of society".

Speaking at the ceremony held in the upper refectory at the Union on 25 August, Professor Terrell said the esteem in which Dr Whitrod was held was best captured in the dedication of the book, *Australian Policing: Contemporary Issues*, by Duncan Chappel and Paul Wilson.



Ray Whitrod—strong and compassionate values. Photo: Brenton Edwards

"This book is dedicated to Ray Whitrod—a courageous and vindicated fighter for integrity and policing," the dedication says.

The dedication explained that this "vindication" referred to Dr Whitrod's "long and lonely battle against a deeply entrenched corrupt police under his command"—an issue over which in 1976 he felt obliged to resign as Commissioner of Police in Queensland. His stand was vindicated in the late 1980s by the Royal Commission presided over by Justice Tony Fitzgerald.

Professor Terrell said Dr Whitrod's approach to policing had been characterised by "a deep concern for the education of police, a concern often resist-

ed by colleagues and subordinates".

"Behind Ray Whitrod's commitment to high professional standards, to justice and to equity, are strong and compassionate values stemming from his Christian faith," Professor Terrell said.

After leaving policing, Dr Whitrod returned to academic life, first as a Visiting Fellow in the Department of Sociology at the ANU and as a Residential Scholar at the University of Adelaide.

He was also a major contributor to the development of victimology in Australia "at a time when it was not fashionable to do so".

He was founder and, later, Chairman of the Victims of Crime

Service in South Australia and the driving force behind the establishment of the Australian Society of Victimology.

He was awarded the Companion of the Order of Australia for his work in the police force and with victims of crime.

The honorary degree was conferred by the ANU's Chancellor, Professor Peter Baume, and the ceremony began with an academic procession including the Vice-Chancellor of the University of Adelaide, Professor Mary O'Kane, the Chancellor of Flinders University, Sister Deirdre Jordan, and the Chancellor of the University of South Australia, Dr Basil Hetzel.

Dr Whitrod, who couldn't travel to Canberra to receive the degree because of ill health, said he was two thirds of the way through his PhD thesis on the psycho-social impact of prostate cancer on men.

The idea for the thesis was inspired by his own experiences in the cancer ward.

"I was looking at the statistics and found that 10 to 15 per cent of men with advanced cancer survive much longer than they should," he said.

"The median (time for survival) was 24 months, but I found that some men managed to live for 10 to 15 years. I wanted to know what the difference was in these men."

He began by talking to men in prostate cancer support groups across Australia. He then discovered a paper by a Victorian urologist which caused him to rethink his direction. The paper suggested that, because prostate cancer was a relatively "slow moving" cancer, the real question should be why men weren't living longer.

—David Washington

## Report: Australia does not recognise and reward its rural nurses

The role of nurses in country areas is undervalued by governments, rural Australians and medical practitioners, according to the final report of a major study.

The report, "The Role & Function of the Rural Nurse in Australia", was launched last month at the Royal College of Nursing in Canberra.

The study was conducted by two leading Australian nursing researchers — Associate Professor Desley Hegney, from the University of Southern Queensland's Department of Nursing, and Professor Alan Pearson, head of the University of Adelaide's Department of Clinical Nursing and Director of the Joanna Briggs Institute for Evidence Based Nursing.

They surveyed 129 randomly selected rural health services and observed the everyday work of nurses. Rural nurses themselves were also interviewed, and further information was gathered in a national phone-in.

A landmark study internationally, the findings show that

rural nurses carry out an enormous range of health care activities and treatments. These include prescribing drugs, inserting intravenous lines, stitching wounds, taking x-rays, admitting and discharging patients, and providing in-depth counselling. These nurses also frequently manage housekeeping services, oversee security, drive ambulances, and administer finances and files.

Current undergraduate training programs might not equip graduate nurses for this kind of role, and the report suggests that small rural health services are likely to face a shortage of appropriately skilled nurses within the next three years.

It also says that despite a high level of job satisfaction, especially in the smaller health services, rural nurses frequently feel undervalued and often clash with doctors over their roles and responsibilities.

"Rural nursing has a long and proud history in Australia and nurses still carry the brunt of the responsibility for

improving the health of rural Australians," said Associate Professor Desley Hegney, who was the principal investigator for the study.

"On the whole, nurses working in the smaller centres have low stress levels and are very satisfied with their work. The only real source of stress in these small centres is Australia's continued failure to recognise and reward nurses for carrying out roles which are still seen to be the province of medical practitioners," she said.

Co-investigator on the study Professor Alan Pearson said the range of duties which make up the rural nurses' daily work was "amazingly broad in scope, highly sophisticated in terms of knowledge and technique, and central to the provision of quality health services in the country".

He said the report made several recommendations aimed at improving the awareness of nurses' roles in rural areas, as well as improving the education and training opportunities available to nurses.

## Repromed celebrates one hundred IVF babies

Dozens of teddy bears were last month flown from Adelaide to Darwin for a major Teddy Bears' Picnic, celebrating the 100th IVF baby born in the Northern Territory.

The picnic was hosted by Repromed, the University of Adelaide's Reproductive Medicine Unit, which has been providing an IVF (in-vitro fertilisation) service to Northern Territory couples since 1993.

Repromed is a non-profit University body based at The Queen Elizabeth Hospital and Wakefield Clinic in Adelaide, and the Darwin Private Hospital. Using the latest in reproductive medicine technology, Repromed helps infertile couples realise their dreams of becoming parents.

Northern Territory families who have benefitted from the IVF service were invited to the Teddy Bears' Picnic in the gardens of the Royal Darwin Hospital on 10 August.

To mark the occasion, those children born through reproductive medicine programs were each presented with a teddy bear by the NT Chief Minister, Mr Shane Stone, and his wife Josephine.

The teddy bears were flown to Darwin free of charge by Qantas and were accompanied by Repromed General Manager Mr Roger Stables.

### SMALL BUSINESS WORKSHOP

#### How to Grow Your Small Business

23-24 September, Thebarton Campus.

A number of free student places will be sponsored by the Adelaide Metropolitan Area Consultative Committee Inc., a private-sector advisory body to the Minister for Employment, Education & Youth Affairs.

Further details: Joanne Pimlott 8303 3098 or 0414 617 144. Email: jpimlott@il.adelaide.edu.au



# Adelaidean Feature

## Working with Business & Industry

### Power industry funding pays dividends

**E**lectrical engineers at the University of Adelaide are working closely with Australian power companies to improve the efficiency of the power supply, potentially saving the industry millions of dollars.

The research is headed by Associate Professor Mike Gibbard (Department of Electrical & Electronic Engineering), whose research and development projects over the past 15 years have been almost wholly funded by the power industry.

Dr Gibbard and his research team are well-known throughout Australia for their work into the control of power systems.

In 1992 the power systems of South Australia, Victoria and New South Wales became interconnected. This was made possible thanks to special-purpose automatic controllers, called stabilisers, which were designed using methods developed in the late 1980s by Dr Gibbard.

"The power system stretches from Port Augusta in SA to the northern coalfields of NSW," said Dr Gibbard.

"That power system is long, skinny, and characteristically unstable, which means that if you don't have the right automatic controllers, the power generators will pull out of sync and they'll no longer operate with the system."

Stabilisers, which are fitted to individual power generators, not only provide the stability needed by the generators, they also dampen down oscillations in the power supply. If oscillations get out of control, they could cause the generators to shut down, resulting in blackouts.

Dr Gibbard's design method for stabilisers, and the computer software package developed to go with it, was used by South Australia's power corporation, ETSA. Without such a

design technique, South Australia's interconnection with the eastern States would not have been possible.

Following on from this work, Dr Gibbard was awarded a \$200,000 research contract in 1994 by the Energy Research and Development Corporation and the Electricity Supply Association of Australia.

The three-year project, which was completed earlier this year, was aimed at developing new techniques and software to coordinate stabilisers fitted not only to individual generators but also to other power system devices.

The research team included Mr David Vowles and PhD student Pouyan Pourbeik (who is now working for General Electric in the United States).

"That contract turned out very successfully, and based on that we secured a new research and development contract, worth \$240,000, with four different power companies.

"It's fairly unusual to have four individual industry organisations jointly supporting the one research project," Dr Gibbard said, "but the point about all of our research is that it benefits various power utilities and industry.

"Our philosophy is to include the results of our research into the software we develop, which means the time taken from research and development to the time it's used by industry is less than three years.

"That's a fast turnaround, and we've developed techniques and software that have been used throughout Australia," he said.

Dr Gibbard's latest research project, which looks at the automated coordination of power stabilisers, will be completed in the year 2000.

—David Ellis



Associate Professor Mike Gibbard (r) and research officer Mr David Vowles. Photo: David Ellis.

## BUSINESS AND UNIVERSITY

### Special Commentary

by Mr Jim Bettison

**O would some Power the giftie gie us  
Tae see oursel's as others see us**  
Burns; Ode to a Louse (I think ...)

**I do my thing, and you do your thing.  
I am not in this world to live up to  
your expectations, and you're not in  
this world to live up to mine. You are  
you and I am I and if by chance we  
find each other, it's beautiful; and if  
not it can't be helped.**

Fritz Perls (approximately ...)

**T**o write about Universities, and about Business, when closely involved with both, without becoming pompous, or mouthing cliches, is difficult. I often fall into one (or both) of those traps.

Universities and Business are both inherently complex and contradictory. To assert a particular quality in either elicits an often contradictory counter-

view. Both have self-images; ways in which they like to be seen or imagine themselves to be, about which they're terribly sensitive.

I'll start by pretending that I'm Burns's Power, and summarise my answers to some frequently asked questions about Business. Some of what I say may reflect back upon Universities—with luck, it'll help them with a little self-enlightenment.

To start: an often-overlooked fundamental. At its outset, and at all times thereafter, the management of a Business is obliged to deliver to its owners—the shareholders—a profit: and to maximise that profit.

That's the basis of the central contract between the parties who own or control the Business—shareholders, directors, and managers. Consequently, anything that will diminish that profit will

be carefully considered and justified.

Some requirements placed by society by way of laws governing standards of dealing, the engagement, dismissal and working conditions of employees, or corporate environmental responsibility are (or should be) immutable, and will affect profits. Business would, by and large, say that it has few fundamental obligations other than these.

But there are discretionary expenses, that will affect the profits in shareholders' pockets, that are outside these obligations. Cash donations, and the foregoing of immediate profit in the hope of later, increased profits are of this nature: and will, therefore, be most carefully scrutinised by Business before being incurred.

But careful consideration and justification doesn't automatically mean rejection. Let me explain; I think this is one aspect of Business least understood by Universities.

About cash donations. When Business supports activities in fields outside their immediate activity by making donations, or endowments, it does so for two broad reasons.

Firstly, because it is perceived to develop or enhance an image as good corporate citizens; concurrently, the managers have convinced the directors (and ultimately the shareholders) that such an image will be in the best interests of

Business. Good corporate citizenship may deliver anything from a warm, cosy feeling to a strengthening of Business's hand in some present or future political poker game.

The activity supported, cultural or sporting, may have little apparent connection with the corporation; so there is no universal rule for the guidance of supplicants (including Universities) seeking to help Business with its image-making.

Secondly, Business may see a long-term gain; this may be through a business activity still in planning and which is also, therefore, not apparent.

However, in such a case endowment is more likely to be directed, and indeed may be translated to a more overt support (commissioned research, et al, through to commercial venturing).

About present vs future profits. This is really a quantification of the principal that 'a bird in the hand is worth two in the bush'.

A simple arithmetical exercise will compute how big the two birds in the bush need to be, once the size of the bird in hand is known—as well as the rate of inflation in the economy and the rate of return that produced that bird, and the time it'll take to catch the other two.

Continued on page 7



# Working with Business & Industry

## Cadetship fosters agricultural education

Australia's largest rural merchandising company, IAMA, is providing a University of Adelaide student with the chance of a lifetime.

Andrew Ottens, a final-year Bachelor of Agriculture student at the Roseworthy Campus, has been awarded a cadetship with IAMA (SA) Pty Ltd.

With only one position available in South Australia, and many potential candidates, Mr Ottens faced very tough competition for the cadetship.

He went through the same selection process IAMA uses for new employees, with the final decision being based on academic merit and an interview with IAMA executives.

The position is highly sought after because the successful candidate receives a wide range of benefits, including \$3000 funding for their final year of study and 12 months training on completion of their degree. A full-time job with IAMA is also waiting for the cadet.

Andrew Ottens has a strong agricultural background, having grown up on a sheep and cereal property at Lochiel, in South Australia's mid-north.

At Roseworthy his academic prowess has been recognised with two major prizes, the WJ Colebatch Memorial Prize for best performance in theory and practical work in the first two years of his course, and the Daniel Livingston Prize for the student with the highest aggregate in the course's second year.

Mr Ottens said his heart was in agriculture, which is why he chose to study at the Roseworthy Campus.

"I really love farming and I wanted to get into the agricultural industry—particularly agronomy, which is a booming industry," Mr Ottens said.

"The course at Roseworthy covered a broad range of topics with a very practical 'hands on' approach... and with the college's boarding facilities and being so close to home, it was an obvious choice.

"I also know many people who've gone through and studied at Roseworthy, and the course has a strong reputation with good job prospects once you've finished it."

Thanks to his cadetship with IAMA, Mr Ottens's career path is already wide open.

The company, which employs about 1600 people nationwide, has an annual turnover approaching \$1 billion.

IAMA (SA) Human Resources Manager Mr Clive Nation said the cadetship was an excellent opportunity to provide industry support to one of the nation's top agricultural students.

"We've found there's not a lot of industry support for students studying and looking for a career in agriculture.

"By offering a cadetship like this we can look at the top contenders in the course and form a partnership with the 'cream of the crop', as well as identifying other potential employees," Mr Nation said.

"IAMA is a company with a very strong 'people' focus, and by fostering agricultural education in this way we're hoping to play a key role in the future of this industry in Australia."

—Elizabeth Butler  
—David Ellis

In the photo right Andrew Ottens (l) is congratulated by IAMA Human Resources Manager Clive Nation. Photo: Elizabeth Butler



## Thebarton to play part in international drive

The Thebarton Commerce & Research Precinct is one of the key elements in the University of Adelaide's relationship with industry.

Opened in 1992, the Thebarton Campus boasts more than 30 commercial tenants, 10 University research groups and about 400 people, making it one of the largest university owned and managed research parks in Australia.

It is also home to a series of unique programs—such as Business Initiatives from Graduates (BIG), the Graduate Industry Linked Entrepreneurial Scheme (GILES), Project Plus and others—providing vital links and opportunities for students, graduates and industry.

The *Adelaidean's* David Ellis spoke with the Director of the Precinct, and Director of the University's Office of Industry Liaison, Mr Rex Hunter, about the value and future of the Thebarton Campus:

"The Thebarton Commerce & Research Precinct is an important adjunct to the University," Rex Hunter said. "It complements the other campuses and supports activities across a range of disciplines.

"We achieve that by acting as a focus for the University's industry liaison activities, by creating opportunities to bring industry and commercial companies located on this campus into



Rex Hunter. Photo: David Ellis.

contact with the University, to provide opportunities for University staff and students to interact with industry, and to use the campus, as we've done very successfully, as a base for University spin-off companies.

"We also offer a wide range of Graduate Entrepreneurial Programs which attract national and international attention, helping to raise the status and reputation of the University."

*What are some of the most recent developments that have occurred at Thebarton?*

This year the campus has expanded even further following the purchase of an extra 5000 square metres of warehouse, manufacturing and office space. We already have four new commercial tenants in that space and we've constructed a Stress & Anxiety Analysis Clinic for the Department of Psychology, and we're completing an Occupational Hygiene Laboratory for the Department of Public Health. And there will be some further high-level research and development projects, bringing together commercial and University expertise.

*What do you see as the future for the campus?*

Over the last couple of years, worldwide, there's been a growing recognition of the value of research parks to the economy and development of a region. A further aspect which is now starting to emerge is the potential of research parks such as Thebarton to be part of the wider movement of 'new urbanism', of urban renewal, creating opportunities to interact with the community.

We've been doing this for the past three years, which in some ways puts us ahead of the pack. We've developed a strong tripartite relationship between university, industry and the

local community—an holistic approach to the growth and operation of a research park.

The campus has been strongly involved in many projects that have brought together community groups, local council and industry.

I believe we've had an impact on this region in terms of raising the quality of the environment and in broadening the University's involvement in schools, social justice, job creation, and industrial programs.

I see that tripartite relationship between university, industry and community as being a very important aspect of the future of research parks.

*What role does this campus have in the University's aim of becoming a 'great international university by the year 2022'?*

The Thebarton Campus in itself is part of a world-wide industry of research parks, and I believe it can significantly help the University to achieve its mission of being an international university of distinction within the next 25 years.

Great universities such as Cambridge, Yale, Stanford and Princeton have their own research parks, and a successful research park such as ours will bring credit to the University of Adelaide, helping it to achieve international status.



# Working with Business & Industry

## GILES smooths path from university to work

University of Adelaide graduate Stephan Mavrakis knows the benefits of an education program that works closely with industry.

Having graduated from the University with a degree in Electrical & Electronic Engineering, he was last year selected to be a participant in GILES (Graduate Industry Linked Entrepreneurial Scheme) to help develop a specialised piece of instrumentation for mining company Boart Longyear.

GILES is run by the University's Office of Industry Liaison. Participants in the scheme undertake specific projects with industry partners and study for a Diploma in Business Enterprise, providing an important

boost to their skills, knowledge and contact with industry. Project activities form a major part of the assessment.

Mr Mavrakis's project was to help Boart Longyear develop a piece of equipment known as a 'portable dynamometer'.

The aim of a dynamometer is to measure the speed and torque of drilling equipment used to take samples for mining purposes. Although Boart Longyear already had a dynamometer that could be used in a factory or laboratory situation, they needed a portable version that could be taken out into the field and used in the 'real world'.

Under the supervision of Dr Nesimi

Ertugrul (Department of Electrical & Electronic Engineering) and Mr Ivor Paech (Boart Longyear), Mr Mavrakis was able to successfully design and develop a portable dynamometer which could be fitted to drilling equipment.

The unit was finally assembled and ready for testing earlier this year, and the company is now using the dynamometer at its drilling operations.

"This GILES program fulfilled all the objectives," said Mr Jim Massey, coordinator of the Enterprise Development & Collaboration Service with the University's Office of Industry Liaison.

"It provided Stephan with the opportunity to carry out research in

collaboration with an international company, and it also enabled him to increase his knowledge of project management, business communication, entrepreneurship and innovation.

"Programs such as GILES and the Project Plus Program, which allows Honours students to work with industry on research, are an important part of the University of Adelaide's ongoing collaboration with industry," Mr Massey said.

Following his involvement in GILES Mr Stephan Mavrakis was employed as a full-time software support engineer with Spectra Systems Pty Ltd, a company producing quality control software.

—David Ellis

## 'Wool is a wonderful fibre': course builds professional skill

Helen Daily has a strong commitment to Australia's wool industry.

Now, by studying for a Bachelor of Applied Science (Agriculture) (Honours) at Roseworthy, the 1997 University Medal winner has been able to build on her industry experience as a professional wool classer and move into wool education and research.

The degree has also broadened Ms Daily's practical and scientific knowledge—her Honours year study was focused on wool biology and genetics.

She is now running the wool science subjects offered by the Cooperative Research Centre (CRC) for Premium Quality Wool at the University of New England in Armidale, NSW, which are taken as part of the University of Adelaide's Bachelor of Agricultural Science course at the Waite Campus.

In this role Ms Daily is involved in a unique teaching system using video conferencing technology, facilitating long-distance learning through a network of four interstate universi-

ties—Adelaide, Western Australia, New England and University of New South Wales—the CRC and CSIRO Division of Wool Technology.

The video suites at the campuses provide real-time interaction between lecturers and students and maximise the expertise available around Australia.

Students can ask questions, observe practical demonstrations and discuss issues with industry leaders who act as guest lecturers—even though they may be thousands of kilometres from the campus.

"I've had a long-standing interest in vocational education," Ms Daily said.

"Wool is a wonderful fibre and it's so important to Australia. It's been such a good industry to me, and I'm enjoying being a part of its development, especially using such up to date technology," she said.

Left: Helen Daily—"Wool is a wonderful fibre". Photo courtesy of Dept of Animal Science.



## Business and University: special commentary continued

From Page 5

And the forecast outcome needs also to be adjusted according to the likelihood—the probability—of both (or indeed even one of) the two bushy birds being caught. (It usually all adds up to indicate that the bush needs to be rather sturdy ...)

Universities lose brownie points with Business when they fail to appreciate this short term vs long term consideration. It's also relevant to the price that Universities believe their IP can command—of which more later.

Recently Business and Universities have met this problem by joint venturing; which is another way of saying that the Universities have provided Intellectual Property on a pay later, pay on outcomes basis. This is excellent in concept.

A common stumbling block, however,

is the valuation of the IP. Universities don't often understand that Business has, pragmatically, a general rule-of-thumb that a piece of IP as presented by the researcher has incurred only about 10% of the ultimate cost (and perhaps slightly less time) to take the IP to market.

### *I try to tell Business that it ignores at its peril the truths that Universities have learnt*

Such considerations apart, there are often horrendous mismatches of expectation between Business and University. This is where the moderating skills of our Luminis, and its counterparts, are invaluable, for they are accustomed to navigating in this no-man's-land where both parties are still learning the terrain.

They can assure Universities that, although there is no single, universal truth which describes the activities and aspirations of Business, that deals can be struck and made to work.

They will help Universities to understand that Business at its best—and surely, that's the sort of Business that

ductive Business and University interaction than has been the case for ten or fifteen years.

It will better equip each of Business and Universities to understand how the other functions, and know the other's expectations, if this opportunity is to be converted.

When Business and University do really meet, it's beautiful. Much of the time I spend talking to Universities (and their people) about Business is in trying to tell Universities that Business has a thousand things and ways from which Universities can learn.

Conversely, I try to tell Business that it ignores at its peril the truths that Universities have learnt—and are still learning. It's exciting to feel like a broker for change.

I J Bettison

Senior Deputy Chancellor



# Working with Business & Industry

## BIG bananas make a dream come true

Ramy Azer's dream of mass-producing ancient Egyptian paper has taken a great leap forward, thanks to hard work, some help from Australia's banana industry, and his involvement in the University of Adelaide's BIG scheme.

BIG (Business Initiatives from Graduates) is aimed at fostering tertiary students and graduates who have innovative business ideas.

Those accepted into the scheme are provided with twelve months of some financial support, training, assistance, rent-free office space and mentor support to help establish their new business.

Successful applicants also undertake a two-year Graduate Diploma in Business Enterprise, giving them the knowledge to set up and run their own small businesses.

Mr Azer, who completed his Mechanical Engineering degree at the University of South Australia in 1995, decided against taking a job with a major oil company and instead turned to his dream of mass-producing papyrus—environmentally friendly paper based on the papyrus of ancient Egypt.

"Papyrus is merely 'paper' in Latin, so any piece of paper is papyrus. But these days papyrus is used to describe the old Egyptian paper, which is made from sliced reeds or other plant material," Mr Azer said.

Egyptian born, Mr Azer once sold papyrus in Europe as an environmental substitute to wood pulp or forest paper. But he soon realised that the demand for papyrus, which is hand made, was far



Ramy Azer: BIG scheme kickstarts papyrus dream. Photo: David Ellis.

greater than the supply.

His plan was to find a way of mass-producing papyrus, so that those with an environmental conscience could use it as a viable alternative to other forms of paper.

Under the BIG program he has started his business and now operates his own independent company, Papyrus Australia Pty Ltd, which is still located at the University's

Thebarton Campus.

"The BIG program gave me the chance to spend a year starting my business and investigate where I was going with it, what I could do with it. In the meantime you don't have to worry about getting a job. You're also studying, but the study you do adds to your business knowledge," he said.

The first 12 months were spent establishing the compa-

ny on a shoestring budget.

But this year Papyrus Australia received a major boost in the form of a development grant from AusIndustry worth about \$500,000.

"My goals now are much bigger than they were when I first started," Mr Azer said.

"I started off with a \$3000 budget, and I planned to build a small factory that I would operate, pumping out a few papers to sell around Adelaide from the back of a car.

"Now we have a budget of half a million dollars, and we're introducing an industry, a whole new technology, a concept. Now we have the time and money to build the machines we need."

Instead of turning to Nile reeds as his source for the papyrus, Mr Azer sought an alternative plant which was readily available in Australia and could be used to make quality paper.

What he discovered was far greater than he could have hoped for.

"We found that one of the best materials to use was banana—the banana plant itself, not the fruit. It shoots about seven feet in a year, you have this big tree that produces around 60 kilograms of fruit and produces only once in its lifetime, and then you have to chop it down.

"Banana producers end up with at least 200 kilograms of waste for the 60 kilograms of banana that they have each year. And they pay lots of money to get rid of the waste.

"So we discovered this raw material that has more flesh and produces better paper

than the Egyptian papyrus, and it's available and costs nothing."

Ramy Azer has established close relations with the North Queensland Banana Growers Corporation in Tully, who will supply the raw material initially at no cost to Papyrus Australia.

"Because they're happy for us to take the banana waste off their hands, they're giving us free land, free sheds, and free raw material.

"Our first factory will be based there," Mr Azer said. "It really couldn't have worked out any better."

Mr Azer said that a fully functioning manufacturing plant was still about two years away.

In the meantime, testing would continue in a bid to develop the best quality papyrus possible, using the most environmentally friendly methods possible.

"The normal process of making paper usually involves a lot of water and chemicals," he said.

"But our main objective is to eliminate any chemical process, and at the same time we're looking at reducing the energy consumption of our factory.

"We already know that the paper we can produce is stronger and better quality than pulp or recycled paper.

"And we believe there are people in the community, people with a high environmental consciousness, who will see papyrus as a viable alternative to other forms of paper."

—David Ellis

## New post to maximise ANRS commercial potential

The Faculty of Agricultural & Natural Resource Sciences (ANRS) is now working closer than ever with the University's commercial arm, Luminis Pty Ltd, to develop commercial opportunities and industry links.

Luminis has appointed Mr Andrew Cecil to the new position of Business Development Manager for Agriculture, Wine and Environment.

Mr Cecil is playing an active role at both Waite and Roseworthy campuses to realise the Faculty's great potential for commercial development and consultancy.

"The Luminis Board has always recognised the outstanding research capability of the Faculty but that opportunities for capitalising on their research through appropriate commercialisation may have been lost," said Luminis Managing Director Mr Peter Hart.

"We believe that direct representation of Luminis in the Faculty and the blend of directly related agri-

cultural skills and business development experience Andrew brings to the position, along with the support of existing Luminis staff, will ensure the development of commercial opportunities from within the Faculty."

Mr Cecil's primary role is to directly assist researchers and departments within ANRS with the identification and commercialisation of research outcomes, formalisation of contract research and consultancy contracts, and the registration of patents, designs and plant breeders' rights.

He will also be responsible for the development of projects, the establishment and development of industry contacts and networks, assisting in the development of project costing and bid preparations, ensuring a continued focus on local, national and international organisations (including AusAid, Asian Development Bank and World Bank), the development of internal and external customer relations, and the fostering of cross linkages with other University departments and faculties.

Mr Cecil was previously the Business Manager for SARDI's Pig and Poultry Production Institute at the Roseworthy Campus.

He has had extensive experience in the development of business plans, marketing plans and promotional material, the development of budgets for trust and contract-funded research projects, financial control of income and expenditure associated with research programs, the financial assessment of new business opportunities and the negotiation with industry for the commercialisation of research outcomes.

He has been designated as the primary Luminis contact for all commercialisation issues relating to the Faculty of Agricultural and Natural resource Sciences.

Through him, all staff will have full access to Luminis expertise for commercialisation, financial, legal and intellectual property issues.

• Andrew Cecil can be contacted on (08) 8303 6753.



# Yoghurt gives the gut a helping hand

It has long been suspected that yoghurt is positive for the body—now speculation is giving way to knowledge as researchers put this popular food under analysis.

Around 1890, the first microbiologist, a Russian by the name of Metchnikoff, attributed the longevity of some Bulgarian peasants to their high consumption of fermented milk. Many traditional cultures have included some form of yoghurt in their diet, believing it to have beneficial properties, but this has largely remained speculation until investigations began in the last 10-15 years.

Emma Southcott is a Master of Science student in the Department of Physiology who is looking at the effects of yoghurt on the intestinal function of children. She is undertaking her work at the Gastroenterology Unit of the Women's and Children's Hospital under the supervision of Dr Ross Butler.

"Yoghurt is a probiotic, a culture of bacteria known to beneficially affect the host," Ms Southcott said.

"The gut has its own population of bacteria, the balance of which is essential for protection against disease and for normal digestive function. Probiotics can help to maintain this balance.

"For example, the antibiotics taken to combat an infection knock out a selection of the gut bacteria for up to six weeks. Ingested probiotics act to restore this natural bacteria flora for a faster recovery."

As part of her honours project, Emma Southcott tested the "leakiness" or permeability of the intestine in children who had been fed sheep's yoghurt.

A low permeability is desirable; the intestinal lining should be providing an adequate barrier to harmful bacteria, preventing the molecules from moving from the intestinal passage into the bloodstream.

She found that yoghurt significantly decreased the permeability of the intestine, which could have important implications for healthy children when travelling, by minimising their susceptibility to pathogens.

Indeed, a previous study performed on British soldiers sent to a foreign country revealed that prior ingestion of a dried form of yoghurt bacteria pre-



Emma Southcott—aim to discover benefits of yoghurt. Photo: David Ellis.

pared their gut for reactions to the new diet and environment. The relative few who did fall prey to gut viruses recovered much faster and experienced a milder sickness, compared to those given "dummy" tablets,

"The gut wasn't as challenged and it could combat the pathogen," Ms Southcott said. "This may be of great significance to children who suffer from a 'leaky' intestine."

As part of her Masters project, Emma Southcott will be specifically looking at the effect of probiotics on children with Inflammatory Bowel Disease.

This is a highly uncomfortable condition; those affected may suffer with severe cramps and other symptoms for up to six weeks, waiting for the available drugs to take effect.

Gastroenterologists Dr David Moore and Dr Kazu Miki of the Women's and Children's Hospital have noted that in the active state, the intestinal permeability of afflicted children can be doubled, leaving them at risk of being exposed to various undesirable substances such as pathogens. It is thought that there is an increase in intestinal permeability before the actual symptoms are presented.

"If we can give them yoghurt beforehand and they don't flare up, we have achieved something," Ms Southcott said.

include in a balanced, nutritional diet, it would be premature at this stage to expect too much from your average tub. A multitude of factors contribute to an individual's health, such as genetic makeup, lifestyle and environment—yoghurt cannot influence them all. Similarly, people of different ages have different dietary needs.

Ms Southcott's studies are unique in that they focus on a paediatric group. Little is known about how this section of the population can benefit from yoghurt and whether probiotics can assist those afflicted with Inflammatory Bowel Disease.

This may soon change. At a recent meeting of the South Australian Division of the Australian Society for Medical Research, Emma Southcott won the Ansett Australian Young Investigator Award for best poster presentation of her Honours work.

In November, she will be presenting this work at a national conference in Queensland for the Australian Gastroenterology week.

Along with her allied studies on fibre, she aims to make a significant contribution to nutritional research and discover how yoghurt benefits humans in general—"whether by altering immune function ... or something better, who knows?"

Although yoghurt is a wise choice to

—Emily Collins

## New scientific society

Associate Professor Andy Austin from the Department of Crop Protection has been elected as the inaugural President of a new scientific society, the Society of Australian Systematic Biology (SASB).

The Society has been formed to represent and foster the interests of systematic biologists. This encompasses the broad interests and activities of scientists working in the areas of taxonomy, phylogenetics, biogeography and evolutionary biology and biodiversity.

Dr Austin said a noteworthy feature of the new Society was that all communications would be handled electronically, with "nothing put down on paper". From a starting point of 50 people, the initial mem-

bership has grown to 250 in twelve months and the Society will hold its inaugural Conference and AGM at the University of Adelaide from 29 September to 3 October 1997.

Andy Austin is an entomologist researching the molecular phylogeny and systematics of parasitic wasps that have application as biological control agents, and the evolution of parasitism among the insects. He has worked at the University of Adelaide for twelve years, won the PGSA's Supervisor of the Year award in 1994, and the Stephen Cole the Elder Prize (for postgraduate supervision) in 1995.

The SASB home page can be found at <<http://www.science.uts.edu.au/sasb/>>.

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### Going to a conference this year?

If you will be attending a national or international conference this year, then consider volunteering to host it in Adelaide.

The Adelaide Convention and Tourism Authority (ACTA) is working with the University of Adelaide to bring more conferences to Adelaide. We are here to help you and provide complimentary support from the earliest bidding process to the final realisation of the conference.

We provide an impartial 'one stop shop' and can help you with all of your conference needs.

So if you will be attending a conference in 1997, why not take a package of information on Adelaide, including a complimentary promotional video.

For details of support provided, and to obtain your Adelaide package, contact Ms Anne-Marie Quinn on 8212 4794 or the Vice-Chancellor's Office on ext 33011. Email: <[aquinn@registry.adelaide.edu.au](mailto:aquinn@registry.adelaide.edu.au)>.





# Uni club sets targets for continuing viability

The University of Adelaide Club has launched a drive to boost its membership to 1200 within the next two years and to promote the Club and its facilities as a major resource for the University.

The Club, which currently has about 1000 members, aims to increase its membership by 20%, improving its viability for the future and providing more members of the University community with a range of quality services.

As outlined in a development plan, the Club will promote its many strengths—such as its friendly and comfortable social atmosphere, its excellent function facilities, and its

convenient location for staff on the Hughes Plaza at the North Terrace Campus.

The plan also identifies areas of growth over the next few years, with a view to consolidating the Club's longer term viability.

The University of Adelaide Club was established in 1950 and moved to its present location in 1971; it was extensively refurbished in 1987.

Membership is open to academic and general staff and postgraduates of the University, as well as employees of South Australia's other universities and associated organisations (State Library, South Australian Museum,

the Art Gallery, Adelaide Zoo, Royal Adelaide and Queen Elizabeth hospitals), and graduates of any university.

A variety of services and facilities are available to members at a reasonable cost. These include an extensive lunch menu (11.30am–3.00pm daily) and an evening meal service (5–7pm). Complimentary tea and coffee are provided, and members also enjoy a wide range of newspapers and magazines from Australia and overseas.

There are upstairs dining rooms for group bookings such as personal functions, departmental lunches, dinners and cocktail parties. They can also be booked for business functions such as

seminars, trade displays, book launches and small conferences.

In addition, the Club's garden dining area (the "campus oasis") provides a good venue for meetings and barbecues in an outdoor setting.

Despite increasing competition from other city-based venues and professional member clubs, the University of Adelaide Club's management is optimistic it can expand its membership by maintaining extremely good value and being responsive to its members' needs.

• Anyone with questions about membership should phone the Club on 8303 5240.

## Rod's nose for quality is the yardstick for members



University Club Manager Rod Scroop—wine evaluation formula never lets him down. Photo: David Ellis

Rod Scroop knows a good wine when he tastes one.

As the Manager of the University of Adelaide Club, it's his job to keep abreast of the top quality and best value wines available.

The Club not only operates as a licenced club but also has an off-licence endorsement, allowing it to sell bottles of wine to members for their

own personal consumption.

It does this at a reduced rate, comparable to (and in some cases better than) the discount stores around Adelaide—one of the many advantages of membership of the Club.

The Club currently stocks about 300 different varieties of wine, and Mr Scroop has taken a personal interest in selecting each and every one of them.

When he took up the position of manager in 1989, one of the first things Mr Scroop did was to rebuild the Club's wine stock from scratch, in a bid to cater to the wide variety of members' tastes.

To do this he drew on his 25 years of experience in the hospitality industry and his own personal knowledge of wines.

"My philosophy is to sell only good quality wines that represent value for money," said Mr Scroop, who has even developed his own wine rating system, paying special attention to that philosophy of quality and value for money.

He says the rating system has become a "yardstick" for many Club members.

"Those who know me and the product that I stock know that they can go into the Club's bottle shop blindfolded and pick out a bottle of wine—and it won't let them down," he said.

"We stock about 95% South Australian product. The rest is made up of a sprinkling of premium products from Western Australia, Victoria and New South Wales. Every now and then we sell a bit of New Zealand product, and we're currently having some success with a small range of Italian wines.

"We're working hard at promoting our wines, because we want our members to have the benefit of a wide range of quality product. I've been absolutely adamant that we will only sell the very best wines that represent

the very best value," he said.

Mr Scroop said he isn't one of those people who favours a particular wine over another, instead he likes them all. Nevertheless, he is very certain about what constitutes a 'good wine'.

"I have a particular formula that I use for evaluating the wines, and that never lets me down. It's based on balance—colour and nose, middle palate, and back palate. Those three major components have to be totally right.

"All the wines I stock are fruit driven. If they haven't got fruit they haven't got anything. And hand in hand with that the wine has to be balanced. If it's unbalanced it won't get on the shelf," he said.


"Of the 300 types of wine we have in stock, I would have probably tasted about 98% of them. If I don't know it I won't stock it, and as far as the commercial wines go I know them all."

Mr Scroop said wine marketing was one of the most promising and growing areas in the Club's range of services available to members.

He said the aim was to have each member buy an average of two bottles a month from the Club.

"That's not too big an ask. There are some really cheap but good quality wines on offer. If members buy their wine from us that also means our wine sales strengthen, which makes the Club much more viable overall, and that's the bottom line," he said.

—David Ellis



### Unibooks Computer Week

Unibooks is holding its annual Computer Week from Monday 8 to Saturday 13 September.

Unibooks customers can take advantage of a 15% discount on all computer books, as well as surprise special offers and a competition.

The competition is available for entry only in-store and offers customers the chance of winning a first prize of Office 97 and an assortment of other computing products valued at \$1000.

There is a second prize of Office 97 and other products worth \$700.

**Computer Week: 8-13 September**



The victorious Division 1 team. Photo: Ursula McGowan.

## Sweet victory for Uni baseball team

The University of Adelaide's A Grade baseball team VARSITY enjoyed the sweet taste of victory on 30 August when it won the Division 1 premiership in its first year of competition at that level.

Varsity defeated KAOS in the grand final match, which was played at Flinders University.

The team comprises a mix of graduate and current students. The fortunes of the baseball club were revived some twelve years ago when it was reconstituted by a group of University cricketers who wanted to play baseball to keep fit during winter.

Their efforts have been so successful that there are now several University teams playing in the competition.

Varsity moved from Division 2 to the top Division this year.



## Alumni IN BRIEF

### Politics of Affirmative Action

Dr Carol Bacchi, of the Department of Politics, will present an illustrated talk on "The Politics of Affirmative Action" as part of the Alumni Activities Program on Thursday 25 September at 7:30pm in the Benham Lecture Theatre, Benham Laboratories Building.

Dr Bacchi published a book of the same title early this year. Her talk will examine why affirmative action policies have so often failed to translate into meaningful reform.

This talk is free, but please telephone the Alumni Office on 8303 4275 to indicate your intention to come. Individual, group and family bookings all welcome.

### East End Cinema Offer

English director Mike Leigh's latest film, "Career Girls" opens nationally on 4 September, and will be screening in Adelaide at the Palace East End Cinema complex.

"Career Girls" concluded shooting only days before Mike Leigh left for the Cannes Film Festival where his previous film "Secrets and Lies" received its world premiere and went on to win the Palme d'Or.

"Career Girls" looks at two young women of 30 who meet up after a long period apart, and rediscover the friendship they enjoyed when they shared an apartment as students.

A special offer is available for Alumni Association members during the month of September. By showing your Alumni Association membership card at the box office, you may purchase two tickets to "Career Girls" for the price of one. (Not available Mondays, public holidays, or after 6:00pm Saturdays.)

### Events outside Adelaide

The Alumni Association will be holding events in Melbourne on Wednesday 1 October 1997 (to be confirmed), Hobart on Saturday 4 October 1997, Jakarta on Wednesday 8 October 1997 and Sydney on Saturday 8 November 1997.

Members of the staff of the University who may be in those places at those times will be welcome to come along. For further information call Geoff Sauer on 34277 or Adrienne Eccles on 33196.

### Volunteer Tour Guides needed

Many of the visitors to Adelaide spend time on North Terrace enjoying the many attractions of our capital city's cultural precinct.

The University of Adelaide has much to offer the visitor. As well as being an important centre of teaching and research, the University is part of the State's history and heritage and plays an important part in the cultural and intellectual life of South Australia.

The Alumni Association has agreed to help visitors and the local community to know the University of Adelaide better by offering regular walking tours of the campus.

To do this, we need a team of volunteers interested in being trained as Tour Guides.

If you would like to become a Volunteer Tour Guide, or would like to know more about the proposed Campus Tours Program, please call Adrienne Eccles at the Alumni Office, 8303 3196.

# Outstanding achievements by our recent Law graduates

A number of recent University of Adelaide Law graduates who have been studying overseas have achieved great distinction recently.

In the UK, Sam Doyle has earned a First in the BCL at Oxford and Sam Bagot a First in the LLM at Cambridge. Meanwhile, the 1997 Rhodes Scholar, Anthony Roediger, has taken up his BCL studies at Oxford.

On the other side of the Atlantic, both Nick Shaw and Tim Cox have completed their LLM studies at Columbia Law School in New York, each being awarded the title of James Kent Scholars.

"This indicates that they graduated in the top seven students in a class of almost 400," said the Dean of Law, Associate Professor Rob Fowler. "Both have now sat the New York Bar Exam; their results will not be known for several weeks."

"In a related vein, Paul Kerlogue recently completed the New York Bar Exams at his first attempt, which is a relatively unusual feat."

Chris Bleby, who is currently working at the Crown Solicitor's Office in Adelaide, has been awarded a WM Tapp Studentship from Gonville and Caius College,

Cambridge (which is accompanied by an honorary Cambridge Commonwealth Trust Scholarship). He will leave in October to commence his PhD in International Law.

Professor Fowler said the Faculty was also well-represented by its recent graduates in North America, with Natalie Klein just arriving at Yale, Kate Gunning at Columbia and Jonathon Gill accepting an offer from Columbia.

"We can rightly feel considerable pride in the accomplishments of these distinguished graduates of the Law School," he said.



Benjamin Grave. Photo courtesy of Grave family.

## Off to Oxford for Dentistry winner

Congratulations to Benjamin Gerald Grave who is the winner of the 1997 JL Eustace Memorial Scholarship.

Dr Grave graduated in Dentistry in 1995 after completing an Honours Degree of Bachelor of Science in Dentistry (with First Class Honours). While in dental practice in Ballarat he also passed the primary examination of the Royal Australasian College of Dental Surgeons in December 1996.

He will be reading for the Master of Science in Human Biology at the University of Oxford in the 1997-98 academic year. His dissertation will be an extension of his Honours research; in particular, he will focus on the cervical spine in children with craniofacial anomalies.

The JL Eustace Memorial Scholarship is a postgraduate travelling scholarship awarded annually by the Faculty of Dentistry and designed to allow outstanding candidates in dentistry to undertake study leading to a higher degree in another institution. It was endowed by the late John Leonard Eustace, who was a member of the part-time staff of the Dental School for thirty years.

## Centenary of Florey's birth in 1998

The Centenary of the birth of Howard Florey, one of Adelaide's greatest alumni, is to be celebrated in 1998 with activities in Canberra, Melbourne and Adelaide.

The Centenary activities will provide recognition of Florey as a great Australian scientist, increase interest in the study of science in primary and secondary schools and celebrate Australia's achievements in biomedical and

scientific research.

The celebrations will be launched on Australia Day next year, 26 January. The National Committee is chaired by Dr John Best and the Adelaide Committee by Professor Ross Kalucy and Mrs Lynette Ninio.

During 1998 the inaugural presentation of the biennial Florey Medal and award of \$30,000 will take place, a scientific symposium

will be held at the John Curtin School of Medical Research at ANU and the National Science Week and Florey Celebration will take place from 2-10 May.

In Adelaide, celebration of the Florey Centenary will include a Florey Day Dinner on 24 September, a cycle tour around Florey's Adelaide, the launch of a Florey Rose and the production of a Florey South Australian wine.

## Florey Exhibition a great success

The exhibition "Florey and the Miracle Mould" commemorating the work of Lord Florey was seen by over 350,000 people at the South Australian Museum, and 50 schools have used the kits provided for the culturing of Fleming's original *Penicillium notatum* and testing its bactericidal action. The exhibition had a successful run also at the Museum of Victoria.

The Florey Medical Chapter

hopes now to tour the exhibition with support from Visions of Australia to Whyalla, Perth, Geraldton and Kalgoorlie, returning to the Waite Campus for the Florey Centenary on 24 September 1998. The exhibition will then move in turn to Hobart, Sydney, Brisbane, Darwin, Alice Springs and Port Pirie.

The South Australian Science Teachers' Association took great interest in the teaching potential of the exhibition and combined

with the State History Centre and the Florey Medical Chapter to produce the Florey Exhibition CD-Rom, including an extended set of teacher notes.

Copies are available from the State History Centre, Edmund Wright House, 59 King William Street Adelaide or the South Australian Science Teachers' Association, tel 08 8298 2733 or fax 08 8293 3833. Cost is \$45.00.

—Richard Brock



Advertisement

# Taiwan training for local soprano

Recent University of Adelaide music graduate Joanna McWaters has been awarded an international scholarship which will enable her to study language and to develop her singing talents under one of Taiwan's most famous sopranos.

Ms McWaters began singing six years ago when she commenced her Bachelor of Music at the University's Elder Conservatorium. Since 1991 she has performed principal roles with the Gilbert and Sullivan Society of SA and is a founding member of that society's George Street Company.

Her professional work includes performing with the State Opera of South Australia and Co-Opera. Last year she took time out of her Honours studies in Performance to become a cast member with the popular musical production *Phantom of the Opera*.

Thanks to a 12-month scholarship from the Taiwanese government, she



Joanna McWaters with Madam Helen Chen Lee. Photo: David Ellis

will study the Mandarin Chinese language in Taiwan. She will also develop her singing under the tutelage of Madam Helen Chen Lee at the National Institute of the Arts, Taiwan's leading Performing Arts institution.

Ms McWaters previously undertook private masterclasses with Madam Chen Lee while the Taiwanese

soprano was on a cultural exchange trip to South Australia in 1994. They worked together again the following year, and at that time Joanna McWaters received an invitation to travel to Taiwan.

She has now taken up that invitation, after being awarded the Scholarship for Mandarin Training. Under the scholarship she will study

Mandarin at the National Taiwan Normal University. It also gives her the opportunity to work intensively with Madam Chen Lee.

Before leaving for Taiwan last month, Ms McWaters told the *Adelaidean* she was very excited about the opportunity.

"I'm looking forward to the experience of studying Mandarin and Chinese art song within the cultural context of Taiwan," she said.

"Hopefully the skills and knowledge I'll gain from this exchange will have life-long benefits, as well as helping to further strengthen cultural ties between the University of Adelaide and both the National Taiwan Normal University and the National Institute of the Arts."

Madam Chen Lee, who has visited Australia on several occasions, recently spent two weeks at the University of Adelaide with other delegates from Taiwan for a Music Camp directed by Patrick Brislan, the Associate Dean of Performing Arts.



## • Status of Teaching

5UV recently received funding via the Council of Education Association's SATIS-FAC Professional Development Program to produce a series of documentaries on 'The Status of Teaching'. The programs will be broadcast in March 1998 and will target teachers throughout the State and will include talkback segments. Tony Ryan is coordinating the series and would be interested in hearing from staff members with an interest in teaching.

## • Spring Program

5UV's new Spring Program commenced on Monday 1 September. Program details are available from the station's complimentary Program Guide by calling the station on 8303 5000.

## • Lecture Broadcasts

Of particular interest is 5UV's broadcast of the Faulding lectures recently given at Bonython Hall. Later in the year the station will also be broadcasting the reactivated Inaugural Lecture series being organised by the University Librarian.

## Adelaide musician is national Clarinet winner

1997 University Medallist and Master of Music candidate Louise Nowland has won the Australasian National Clarinet Competition.

Ms Nowland attended the Australasian Clarinet Conference in Brisbane in late July for the second and third rounds of the competition, following the first round of judging, which was based on taped performances.

Sixteen candidates were drawn from the country's music schools, of

whom eight were selected to go to Brisbane. The international panel shortlisted five, and from these Ms Nowland was declared the winner.

She received a cash prize and gave a public concerto performance at the conference, which was attended by nearly 200 delegates.

"Louise's success is a clear endorsement of the national standing of the Elder Conservatorium of Music," said the Director of the Elder Conservatorium, Mr David Shephard.

Ms Nowland—who also holds a Doris West Postgraduate Scholarship for Women—has just returned from Germany, where she participated in the Oberstdorfer Musiksommerkademie from 29 July to the third week of August. She was selected to play principal clarinet in the Summer Academy's Chamber Orchestra.

Ms Nowland was also presented with a Queen's Trust Certificate at Government House on Tuesday 26 August.

## ACCOMMODATION

**BLACK FOREST:** Share comfortable bungalow, of interest to architectural student. Studio and computer facilities avail, non smoker. \$80 pw + exp. Ph 8371 0354.

**DERNANCOURT:** Fully furn, 3 br house, suit family with small children, avail Jan-Jun 98 inclusive. Close to O-Bahn, shops, school. Enclosed yard, garage, no pets. \$250 pw + bond. Ph Heather or Mary 8303 5685 or email: <mwh@physics.adelaide.edu.au>.

**GLENSIDE:** 1 br unit, fully furn, close to shops and transport. \$105 pw. Ph Jane Cameron 8272 3877 or 018 082 346.

**HOLIDAY HOUSE:** Second Valley - Available for school holiday rental. Views to sea and hills, easy walking distance to beach. Architecturally designed; sleeps 5. Ph 8379 6510.

**KATHLEEN LUMLEY COLLEGE:** The postgradu-

ate residential college of the Uni has 2 small flats and 2 single study brs (with bathroom) avail for short & medium term visitors to the Uni. Ph 8267 3270 (mornings only).

**MILLSWOOD:** 3 br, fully furn property available Sept - Dec 97. 2 bathrooms, sep dining, air cond family rm. Small low maintenance garden. Close to shops, transport, etc. Ph Vicki Waye 8363 3663 or email: <vwaye@law.adelaide.edu.au>

**RICHMOND:** Female or couple to share with female owner, large house, non-smokers, 10 mins by bus to city, fully furn. \$80 pw. Ph 8352 1953ah or email: <amarrom@geology.adelaide.edu.au>

**WANTED:** Visiting academic working at Flinders and Waite requires accomm for family of 5 from 10 Oct - mid Jan. Refs available. Ph 8259 6298 or 8272 7191 (ah).

**WANTED:** Fully furn unit/flat for elderly couple from UK from end Nov 97 -

## Adelaidean

### CLASSIFIED

Feb 98. Inner Adelaide suburbs pref. Ph 8254 8988 or 0419 813 444.

**WANTED:** Visiting Professor and family (wife and 3 teenage children) require accomm from early Oct 97 - mid Jan 98. Inner southern suburbs pref. Up to \$350 pw. Ph Luci Ferrini 8201 3530.

### FOR SALE

**APPLE MACINTOSH:** LC2/40, 12" colour monitor, Apple Personal Laser Writer LS, plus assorted Microsoft software. Ph 8303 5155.

**AUSTIN 7:** 1937 Tourer driven on 3 Bay to Birdwood runs. Car has been garaged since 92 and is in exc condition. \$4,000 ono. Ph Nick 8222 3269 or 8271 1506 (ah) or email: <nfazzala@health.adelaide.edu.au>.

**COMPUTER MISC:** Word

6 with manuals, \$80. Excel with manuals, \$80. IBM think pad, Canon BJ200 printer, \$1,200 the lot. Ph 8281 6103.

**CURTAINS:** Very good quality, almost new, lace curtains, pinch pleated. 6 curtains with 213 cm drop headed to 130cm. \$350 ono for the lot or will separate. Ph 8265 4028.

**FORD FALCON:** XD 1979, station wagon, t-bar auto, air cond, tow bar, very good cond. SOR 333. \$3,200. Ph 8254 8988 or 0419 813 444.

**HOUSEHOLD ITEMS:** Dining table with 5 chairs; small white modular dressing table & mirror; TV/Video stands. Ph 8254 8988 or 0419 813 444.

**LEATHER COAT:** Ladies, black full length, size 12, as new condition. \$180. Ph 8281 6103.

**NISSAN MICRA:** 1995 LX

manual, silver, immac cond factory warranty, very low kms, VTZ 735. \$12,000 ono. Ph Esther 8293 1158 or 8201 3852.

**UNIT - WAYVILLE:** Spac, 2 br unit, ground floor, attractive group of 6, close to transport. Offers over \$84,000 cons. Currently has monthly rental, exc tenant. Ph 8271 6036 or 8272 6900.

### DEPARTMENTAL

**APPLE MACS:** Obsolete II's, IIci, LCII, LC, SE30 and various monitors. Tenders to Mr W Dorfl, Computer Science by Friday 19 September 1997. Enquiries 8303 4132.

**MACINTOSH LCIII:** With monitor and keyboard, system 7.5.1, 8Mb RAM, 150 Mb HD and modem. Word 5.0, Excel 4.0, ClarisWorks 2.0 all with manuals. \$550 ono. Ph Chris 8303 5009.

**TENDER:** Toyota Camry sedan 1996, auto, blue, 60,000 km, air cond,

cruise control, VUP 746. Inspection 10 Sept, John Terlet, 8303 5855. Tenders in a sealed envelope marked Tender No W237 to the Purchasing Manager by Tues 16 Sept 1997.

**TENDER:** Trailer, heavy duty, checkerplate top, not registered. Inspection 10 Sept (11am-1pm), Greg Atkins, 8303 5327. Tenders in a sealed envelope marked Trailer to Civil & Environmental Engineering by Fri 12 Sept 1997.

### MISCELLANEOUS

**TUITION:** Years 3-12, all subjects. Also French & Spanish for children & adults. Experienced teacher (ex Pembroke). Ph 8339 2986.

**WORD PROCESSING:** \$2.75 per page, after hours service, professional formatting of thesis, essay, bibliography (incl WP on disk), city location. For no obligation outline of services, ph Anne Every 8212 6869 or message 8415 7866.