

# CAMPUS NEWS

## Organic material dating capability established



*Dr Colin Murray-Wallace who has brought amino acid racemisation dating knowledge to Wollongong*

Dr Colin Murray-Wallace, who joined the Department of Geology at the beginning of this year, brought with him expertise in amino acid racemisation dating which potentially allows samples of organic material to be accurately dated.

The Department has since established a dating service and research laboratory that is a resource for national and international research programs in geology, palaeontology, geomorphology, archaeology, palaeoanthropology and historical biology.

During the physical and chemical changes sediments experience following deposition, amino acids and their

precursor peptides may undergo numerous reactions including oxidation, decarboxylation, deamination, hydrolysis and racemisation.

In fossiliferous materials the racemisation process involves the slow, albeit progressive interconversion of L-amino acids to corresponding D-amino acids until equilibrium (racemic condition) is reached.

Depending on the climatic conditions this state may be attained in anything from 600,000 to 10 million years.

Potentially all organic materials are amenable to amino acid racemisation studies.

Materials that have most widely been explored have included marine and

terrestrial molluscs, foraminifer and other micro-fossils, coral, bones, wood, egg shells and teeth.

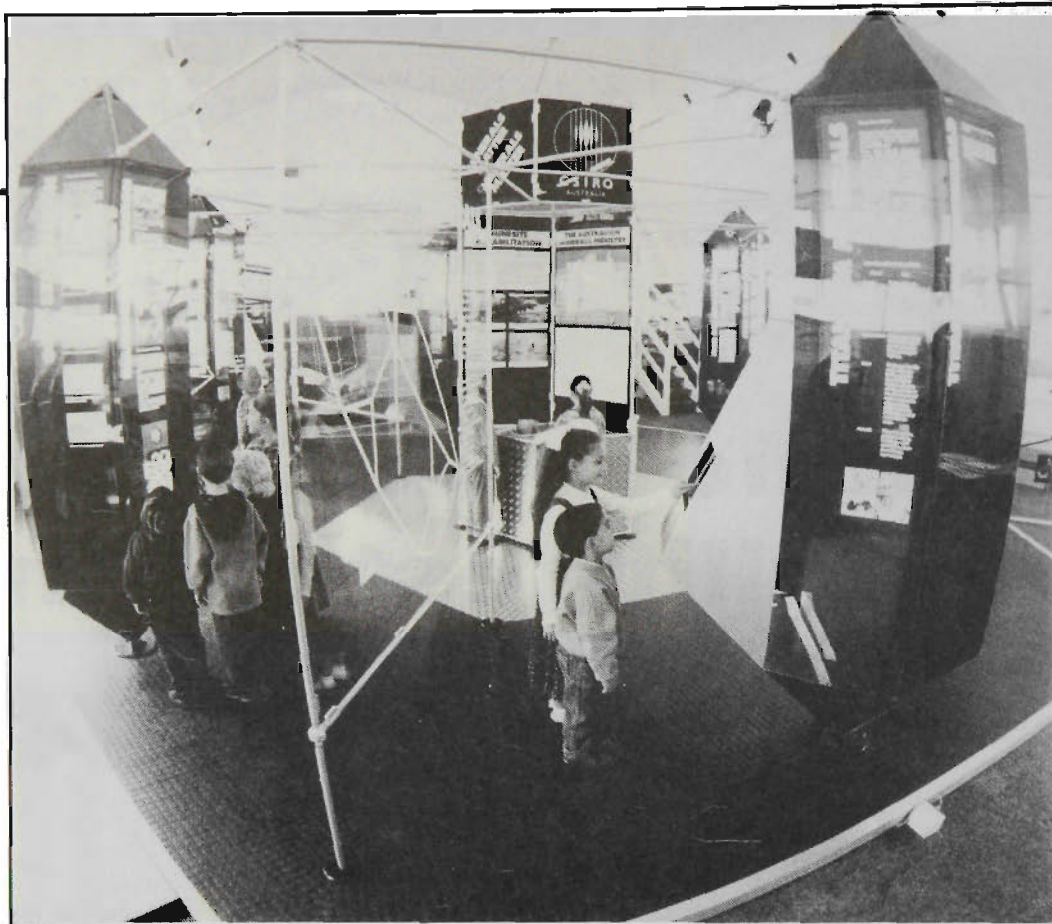
Recent applications have involved 'modern' and 'ancient' soils.

This technique also has possible limited applications in forensic science and it has also been applied in space studies to test for the presence of amino acids - one of the chemical properties associated with life.

Dr Murray-Wallace, who has held positions at the NWG Macintosh Centre for Quaternary Dating at the University of Sydney and the Department of Geology at the University of Newcastle before coming to Wollongong,

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## Don't miss Minerals Matter at Science Centre



School groups, community groups and the general public have been enjoying this latest exhibition at the Science Centre.

Shaped like a giant crystal, Minerals Matter is a walk-in exhibit which focuses on the Australian Mining Industry which combines information with interactive demonstrations.

The exhibit, which is on until 19 August, features

computer programmes operated by touch-screens which allows the visitors to quiz themselves on their knowledge of mining and conservation.

The Science Centre is located at Campus East, Fairy Meadow and is open to school groups during the week and the public on weekends between 1-5pm. Admission \$3 child, \$5 adult.

For further information call 83 6665.

## Organic material dating capability established

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has research interests which include studies of environmental change, Quaternary sea level change and coastal evolution.

He has dated many samples including fossil wood from the Antarctica and Diprotodon teeth from Victoria.

Currently the laboratory here in Wollongong is involved in a collaborative research project with Geography, dating aspects of the Late Quaternary environmental change on Lord Howe Island.

The amino acid racemisation dating capability complements the previously established thermoluminescence dating facility in the Geography Department. Joint research programs using the two facilities are planned for future years.

## Student penalised for computer security breach

Allegations of misconduct made against students are dealt with according to the University's Rules for Student Discipline.

The allegations are considered by an Investigation Committee who recommend an appropriate penalty to the Vice-Chancellor if the student is found to be guilty of the alleged misconduct.

At a meeting held on 5 July the Investigation Committee considered a case wherein it was alleged that a student had carried out actions designed to crack password files and seek security loopholes on University computers, compromising several accounts.

The student's activities had been detected by security staff employed by Information Technology Services during a routine security check of all systems.

On the basis of the evidence presented, the committee found that the student was guilty of the alleged misconduct and had breached the Rules Governing the Use of University Computer Facilities.

The Committee recommended that the student:

- write a letter to the Vice Chancellor and the Director, Information Technology Services, apologising for the inconvenience that his/her actions had caused and giving an assurance that in future he/she would abide by all rules governing the University computer facilities and systems;
- reimburse Information Technology Services for the additional costs incurred by them as a result of his/her actions;
- be banned from access to all University computer facilities and systems for two years.

# New training program boosts \$30b food industry

Australia's \$30 billion food processing industry will benefit from a new shopfloor training program that will enhance our export drive into South-East Asia.

The program is a joint venture between Illawarra Technology Corporation (ITC), the business arm of Wollongong University, and Food Industry Training Limited (FITL), a non-profit company established and owned by the food industry.

ITC Training and Education Manager, Ms Kathy Jones, said the program to provide a Certificate in Manufacturing (Food Processing) for the industry was an emphatic vote of confidence in the practical value of training.

Ms Jones said recent stories highlighting the use of expensive training courses for government senior officials and middle-to-senior management in various organisations ignored the factory floor reality.

'The real story is that businesses want flexible, adaptable training courses for shopfloor workers and supervisors,' Ms Jones said.

'We developed the Certificate in Manufacturing course in response to employer and union requests for a program which would meet the here-and-now training needs of shopfloor workers and supervisors in manufacturing industry, to improve productivity and make the best use of technology.

'Now, in collaboration with FITL, we've got a version of the Certificate tailored to the specific needs of the food industry.

'This is important for our export drive because the food processing industry is the largest sector in Australian manufacturing and employs more than 16 per cent of the workforce.'

The Certificate in Manufacturing is accredited by the NSW Vocational Education and Training Accreditation Board (VETAB).

Students must do seven core modules and several optional modules, which takes 300 hours over two

years.

Unifoods Pty Ltd, a subsidiary of Unilever Australia Ltd, is the first company to take up the new food training course.

One of the biggest companies in the industry, Unifoods makes such well known brands as Rosella, Bushells, Robert Timbs, Continental and John West.

Unifoods has introduced the Certificate in Manufacturing at its Bushells site at Concord (NSW).

Seventeen workers—all volunteers—are in the second month of the two-year course. They include machine operators, maintenance and warehouse staff and coffee roasters.

Training Coordinator for Unifoods, Mr Dennis Hughes, said the Certificate course was a practical way of providing the multi-skilling that workers need for genuine career path opportunities.

**'Businesses want flexible, adaptable training courses for shopfloor workers and supervisors'**

'It's in everyone's interest that we have a more skilled workforce,' Mr Hughes said.

'People inevitably get bored doing the same job or watching the same machine all the time, and mistakes can happen.

'With training, people can move from job to job and work in different departments. That has to be better than feeling you're stuck in one place waiting for someone to leave or die before you can get a promotion.'

FITL Managing Director, Mr Grahame Uhlmann, said FITL and the food industry had been developing specialised training services for many years, because the industry realised that even the most modern technology was useless without a well-trained and motivated

workforce to use it.

'We now have a very extensive array of training, but the pace of technological change and the demands of workplace reform are unrelenting,' Mr Uhlmann said.

'We have to keep on our toes to ensure we are offering appropriate, up-to-date training which is right for each firm.

'Our alliance with ITC means we can combine our special knowledge of the food industry with ITC's expertise in the broad field of manufacturing.'

The food processing Certificate covers 25 modules from maths and science basics to flexible manufacturing systems and hygiene. Flexibility in course design and delivery means that companies like Unifoods can have a program tailored to meet their specific business requirements.

The course can be delivered at a firm's own premises or off-site, in city or country areas. Course providers can fit in with shift change requirements.

Training can also be provided in time blocks to avoid disrupting peak production periods.

By combining manufacturing options such as total quality control and occupational health and safety with options specific to the food industry, such as hygiene in food handling and understanding food processing, the Certificate offers a practical way for companies to improve employees' skills and increase productivity.

The Illawarra Technology Corporation specialises in the manufacturing, engineering, telecommunications, food and waste-management industries.

The Corporation operates on a fully commercial, self-supporting basis and undertakes research and development, consulting and training projects with some of Australia's leading companies.

Since its establishment in 1981, ITC's annual turnover has increased from \$300,000 to \$16 million

## Mining short course addresses industry's legal issues

*Mr Justice Paul Stein from the Land and Environment Court gave a lecture to students enrolled in Mining Law*



The Key Centre for Mines, in conjunction with the Centre for Natural Resources Law and Policy held a short course on Mining Law from 12-16 July.

The course, the first of its kind held at this University, was well attended by people working in the mining industry and by students enrolled in the Master of, and Graduate Diploma in, Mining Management offered by the Key Centre for Mines, as well as students from the Centre for Natural Resources Law and Policy.

The course addressed many of the current legal issues faced by the mining industry today.

Among the major topics included mining and environmental protection and occupational health and safety law in relation to mining.

Professors Martin Tsamenyi and David Farrier from the Centre for Natural Resources Law and Policy co-ordinated

the course.

Lecturers, who were drawn from industry, government and the academia, included: Mr Justice Paul Stein (Land and Environment Court), Mr John Whitehouse (Dunhill Madden), Ms Jillian Segal (Allen Allen and Hemsley), Mr Peter Hopkins (Phillips Fox), Mr Charles Sinclair, Mr John Hawke, Mr Don Fearon and Ms Tamira Stienissen (Department of Mineral Resources), Ms Louise Byrne (Environment Protection Authority), Ms Beverley Hoskinson-Green (Blake Dawson), Ms Glenys McLaine (Wollongong City Council), Mr Steve Lonergan (Callidus Group) and Associate Professor Adrian Brooks (University of NSW).

The Key Centre for Mines is a DEET-funded joint venture between the Universities of NSW and Wollongong.

Associate Professor Naj Aziz is the Deputy Director of the Wollongong Division.

## Wollongong group's major role at congress

Current and former members of the Wollongong Personal Construct Group, associated with the Clinical Research Group, played a prominent role in the recent 10th International Personal Construct Congress in Townsville from 12-16 July.

The congress coordinator and programme organiser was Dr Beverly Walker and the organising committee was convened by Associate Professor Linda Viney.

From the Wollongong group (past and present) the following papers were presented:

- Peter Caputi and Pip Pattison: Alternative approaches to analysing implications grid data.
- Malcolm Cross: A constructivist account of brief psycho-

therapy.

- Sharon-Marie Hall: Organisational change - a personal construct approach.

- Liz McIver: And now ladies and gentlemen, before your eyes...! Eye-movement desensitisation and construct change.

- Kristen Murray, K. Black, L. Wellard and L. Viney: Humour vs. humor: A cross-cultural examination of the perception of cartoons.

- Sue Nagy: Hurting in a helping profession: Nurses' constructions of clinically inflicted and disease-induced pain.

- Bronwyn Seaborn: Exercising caution.

- Nina Southall: Teaching, evaluation and the evaluation of teaching: Using Personal Construct Psychology

in your classroom.

- Linda Viney: A Constructivist model of crisis intervention counseling.

The international recognition of the Wollongong group's contribution to personal construct psychology has resulted in the visit of several distinguished congress participants to the campus for consultation with members of the departments of Psychology and Nursing, as well as the Faculty of Education.

They include David Green (Leeds University), Dr Devi Jankowicz (Teeside), Dr Jorn Scheer (Giessen, Germany), Drs Gabrielle Chiari and Laura Nuzzo (Rome) and Professor Jerald Forster (Seattle).

The group has been meeting regularly since 1983 and meets on Monday 9am in 19:1006.

# Two retire after 30 years' service

The University of Wollongong has lost the services of two staff members with more than 60 years' experience between them.

Dean of the Faculty of Commerce, Associate Professor John Steinke, is retiring after nearly 30 years on campus.

Ian Lowe, Officer-in-charge of Records in Administration, retired this month after nearly 31 years' service.

Appointed as an economics lecturer in 1964, Professor Steinke established the Bachelor of Commerce degree, and has seen it grow from an unpopular course whose critics believed belonged in TAFE rather than in a university, to a large and successful degree with 2600 students presently enrolled.

As well as fulfilling on-campus duties, he has worked extensively with the Illawarra Regional Development Committee carrying out various research projects of value to the community.

Coming from a background as a regional economist in the US, Professor Steinke initiated a project exploring the levels of female unemployment in the Illawarra.

Although published statistics did not show an unusual level of unemployment, research showed that 30 per cent of women were out of work, as opposed to the 5 per cent projected by the government.

Although the federal government initially rejected these findings, they received a better reception at state level, resulting in the establishment of a fund to subsidise industries in the Illawarra primarily employing women.

The project also resulted in the con-



John Steinke



Ian Lowe

cept of 'hidden unemployment' being incorporated into official government methodology.

Other projects undertaken included research into public transport, and the marketing of fruit and vegetables in the Wollongong area.

Professor Steinke has found the University a rewarding place to work, especially enjoying his role as a participant in the University's growth.

Developments associated with his time in Commerce include the establishment of a resource room, which functions as a specialised research library for staff and postgraduate students, the development of a summer session, ventures in continuing professional education and the expansion of the international program.

International students make up more than 20 per cent of the Faculty,

reflecting Professor Steinke's view that, with funding cuts inevitable, each Faculty must mitigate the effects of these cuts by raising some of its own revenue.

Professor Steinke will be travelling overseas for a few months, but will then return to campus.

Not wanting to relinquish entirely his long association with the University, he will be working part-time with the ITC on their international programs.

Mr Lowe has held several positions in Administration and had a long association with the University Cricket and Rugby clubs.

For many years Mr Lowe served as mace bearer at graduation ceremonies.

His possibly unique knowledge of people and events at the University was a valuable resource that will be missed.

## ABSOLUTELY great effort

The University group of Young Achievement Australia (YAA) Business Skills Program, ABSOLUTE, is continuing to achieve.

The group won at the Regional Trade Fair at Westfield, Warrawong, on Saturday 31 July.

They were judged on stall decor, product display, personality, sales technique and product pricing. The test for the group now is to get all their products sold. The Young Achievers will be around the University selling.

So support their business and buy their product - a packaged body kit suitable for taking to the gym or similar activity.



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## TCES win two new research projects

The Technological and Environmental Strategies Group (TCES), headed by Professor Jim Falk of the STS Department has been commissioned to carry out two important new projects.

The first of the new projects, entitled National Review of Greenhouse Information Materials, is being carried out for peak government body - the Australian and New Zealand Environment Council (ANZEC).

The project is administered by the Federal Department of Environment, Sports and Territories (DEST).

TCES has been contracted to identify all education and information materials produced and distributed by government and non-government organisations about the greenhouse gas issue since 1988.

In the next few months TCES will develop a data base of the material gathered and evaluate in detail several items produced by government departments and agencies in terms of quality, accuracy and effectiveness.

The most challenging part of the

project is to develop guidelines for the future production of effective and accurate materials and to identify overlaps and possible gaps in the communication strategies of the different agencies of Federal and State governments.

As well as Professor Falk the project team includes Dr Greg Hampton, Dr Christine Fox and TCES Research Officer Kevin Parker.

The project was won in the face of stiff competition from bids from researchers around the country and is funded to \$35,000.

The second project intervenes in the heated debate over how sewerage is to be treated and disposed of in the Shoalhaven.

This study has been commissioned the NSW Public Works Department and requires TCES to undertake a survey of community preferences relating to the St. Georges Basin/Jervis Bay Regional Effluent Management Scheme.

The objective of this study is to establish, through a statistically valid survey, the community's preference in relation to different options for

disposing of the treated effluent from the area.

The project has been funded to an initial level of \$40,000 and will involve Dr Hampton, Professor Falk, Mr Parker and Dr Sharon Beder.

These contracts follow a steady stream of commissioned environmental policy work carried out by TCES in the last 18 months.

The TCES model seems to have been successful in bringing a range of academics from across the university into an increasing flow of interesting environmental projects focussed on technological change and environmental strategies.

This seems to bode well for the future of the new Environmental Institute which is intended to catalyse such work across an even broader canvas.

There is clearly a demand in the wider community for competent environmental research and the University of Wollongong is developing an increasingly strong reputation, in both the physical and social sciences areas, for being able to make an effective contribution.

## Neumann Prize to Maureen Edwards

Wollongong PhD student, Maureen Edwards, is the latest recipient of the prestigious B.H. Neuman Prize.

The prize is offered for the best talk given by a student at the Annual Meeting Australian Mathematical Society

Ms Edwards finished her Bachelor of Mathematics degree in 1990 and and gained first class honours in 1991 under the guidance of Professor Jim Hill.

She enrolled in a PhD in 1992, with Professor Phil Broadbridge as supervisor.

Her current research may be divided into two areas.

The first is symmetry analysis, which achieves reduction of order in partial differential equations, and often leads to exact solutions to particular problems.

There has been renewed interest in this topic, with some significant books and papers appearing within the last couple of years.

The underlying theory has recently been extended, providing explanations for special cases which were known to exist although it was not previously understood that these cases could be derived in a systematic manner.

Further extensions to this theory are possible, and Ms Edwards has been exploring these ideas as part of her research.

The other area of her work is more

physically motivated, involving application of the theory of symmetry analysis to physical problems.

For example, her most recent work involves the derivation of an exact solution (in two and three dimensions) to a partial differential equation known as the diffusion-convection equation,

This equation governs the flow of liquid through a porous medium, as well as possessing other physical applications.

Her award-winning talk demonstrated the usefulness of symmetry analysis to obtain a reduction in the given partial differential equation, and also the exploitation of a physical constraint which led to an ordinary differential equation to which an exact solution could be found.

This work has recently been submitted for publication, and will form part of Ms Edwards' final thesis, which should be completed early in 1995.

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# Of mice and men and cows

It is obvious that cows are much larger than mice, but is not so obvious that mice are much more metabolically active than cows.

Patrice Couture, pictured with both a cow and a mouse (on Patrice's arm), has just completed his Ph.D. studies into why mice are metabolically more active than cows.

Last century it was discovered that as mammals get larger their metabolic intensity decreases, but even to this day it is not precisely known why this occurs.

Mr Coulture is a Canadian and did his M.Sc. on the ecological physiology of fish in Quebec. A few years ago, he came to Wollongong to do his Ph.D. with Associate Professor Tony Hulbert in the Department of Biological Sciences.

He decided to examine the cellular basis of this body size related variation in metabolism for his Ph.D. research.

Mr Coulture examined rats, rabbits and sheep as well as mice and cattle. While a cow is about 20,000 times the size of a mouse, mice consume about 13 times the amount of oxygen (on a weight basis) than does the cow.

About half of this difference is due to the relative size of the internal organs and the rest is due to particular cellular characteristics.

Mr Coulture showed that a gram of mouse liver consumes about 7 times the oxygen consumed by a gram of cattle liver and values for all the other species were intermediate.

The situation was similar for the kidney. He has also shown that mouse



tissues use 3-4 times the amount of energy to pump sodium out of them than does the equivalent amount of tissue from the cow.

This may be related to the different composition of cell membranes in

different sized species.

Mr Coulture has demonstrated that the cell membranes of tissues from small mammals are considerably more polyunsaturated than those from larger mammals.

Until 20 August: **Indigeneous Peoples Week Art Exhibition** by Trish Woods, Jeffery Timbery, Kevin Butler, Robert Storm and Coomaditchie Artists Co-op. Bistro Lounge, Union Building 2-4pm Monday-Friday

29 August: **University Open Day.** Everything is open and everyone is welcome

10 September: **Postgraduate Research Student Open Day.** Union Function Centre

28-30 September: **1993 ANZAAS Congress.** Curtin University, Perth.

**Illawarra Committee for Overseas Students** events for this year are: 18 September, Blue Mountains; 26 and 27 September, Canberra; 16 October, Sydney Aquarium and harbour cruise; 4 December, Australia's Wonderland. Tickets and details are available from ICOS office, 3rd Floor, Union Retail Centre on Tuesday, Wednesday and Friday from 9.30am to 2pm or phone 21 3158.

10 October: **Annual University Service** at 7pm at St John's Anglican Church, Eastern St, Gwynneville

## What's On

9-10 November: **International Conference on Islamic Banking**, organised by the University's International Business Research Group and sponsored by Al Baraka Investment And Development Co., Jeddah, Saudi Arabia. Venue: The University Centre, Sydney. Enquiries: Dr Nelson Perera, phone 21 4028.

The following **seminars** held jointly by the Department of Sociology and the Research Group Sociological Analysis of Political and Cultural Change: Thursday 12 August, 1.30pm Mike Donaldson, University of Wollongong: What's wrong with Hegemonic Masculinity? Thursday 2 September, 1.30pm Andrew Cornish, University of Wollongong: Sex and the Single researcher in northeast Thailand. All are to be held in Room 2085, Building 19. Enquiries to Ellie Vasta, ext. 3744.

Considering further study or just some recreational reading? Visit the **Campus Alumni bookshop and gallery book sale**

at Campus East, Fairy Meadow. The stock of used books covers: Science & Engineering, Social Sciences, Arts & Music, Education, Fiction & Non-Fiction, Young Readers' Stories & Classics. Open every fourth Saturday and Sunday of the month from 1-5pm, the bookshop is located at Cowper Street, Fairy Meadow (opposite the Science Centre). Your donations of any material are invited. These may be left any weekend afternoon at the Science Centre (Please mark 'Booksale'), or The Library or Students Enquiry Desk during the week.

**Animal Experimentation Ethics Committee** meeting dates, with agenda deadlines in brackets, are: 22 November (12 November).

**Human Experimentation Ethics Committee** meeting dates with agenda deadlines in brackets are: 24 August (10 August); 5 October (21 September); 16 November (2 November); 21 December (7 December).

**Undergraduate Studies Committee** meeting dates, with agenda deadlines in brackets, are: on the following dates: 31 August (17 August); 9 November (26 October). Submission to Trevor James, ext. 4457, by 5pm of deadline date.

## Quality review process underway

The Department of Employment, Education and Training has advised that institutions that are able to demonstrate, in the context of their own missions and goals, the effectiveness of their quality assurance policies and practices, and the excellence of their outcomes, will benefit from a share of additional funds available for this purpose.

The review process will largely involve the preparation of a portfolio of quality assurance documentation and evidence of outcomes and a one-day visit by one of the committee's review teams on 19 October.

The portfolio closing date is 20 September.

Copies of the Quality Guidelines have been sent to deans, heads and all those involved in developing the University's portfolio.

The Pro Vice-Chancellor designate, Professor Christine Ewan, attended a briefing seminar in Adelaide on 5 August and the University will be conducting a workshop for all Quality Nominees shortly.



## Stop Press

**Seminar at the Centre for Research Policy (Bldg 29)**  
Friday August 13, 1pm - ALL WELCOME

'Current Trends in Science and Technology in China: Innovation, Industry and International Networks'

Dr Xu Shao Hui, State Science and Technology Commission, China

**Campus News is published weekly on Wednesdays. Send material, preferably by Microsoft Mail or on disk, to Gillian Curtis (042) 21 3110 by noon on Monday of the week before that of publication**