

# THE UNIVERSITY OF WOLLONGONG

# CAMPUS NEWS



Distributed each Tuesday

Deadline for copy noon Monday  
of previous week

Editor: George Wilson, Tel. (042) 270391

24 November 1987

## ILLAWARRA TECHNOLOGY CENTRE TO BE OPENED NEXT WEEK

*The official opening of The Illawarra Technology Centre Limited will be performed by Mr Barry Jones, Federal Minister for Science and Small Business, and Mr R.J. Mulock, NSW Deputy Premier and Minister for Transport. The ceremony will take place on Monday November 30 at 3 pm.*

Lack of the necessary skills or support to get a concept up and running can kill a good idea before it has a chance to prove itself.

Because few entrepreneurs have had necessary back-up in the past, Australia missed out on good products, processes and services being produced here. Watching Australian ideas earning millions, often billions, for other countries instead of ourselves is a severe lesson to us all. We are now however beginning to learn from past mistakes. The very existence of the Illawarra Technology Centre underlines the fact that the lesson is being absorbed.

The Illawarra Technology Centre has been set up to breathe life into new ideas and thus more life into the Australian economy.

ITC's raison d'être, in the widest possible sense, is to help with the commercial development, manufacture and marketing of products and services in technology-based areas.

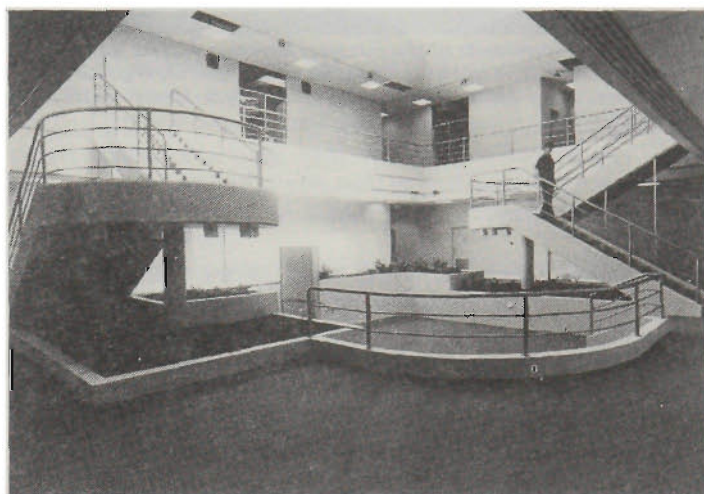
The Centre's services can be used by existing industries seeking to upgrade and extend their technology. ITC's main thrust is however in the area of new development.

To achieve this ITC provides technological information to entrepreneurs and industry groups requiring access to data bases and information networks.

The Centre helps, too, in providing technical, marketing and management advice with a strong emphasis on the application of technology. This is done on a fee for-service-basis.

Fostering enterprise by providing incubation facilities and management services assistance to entrepreneurs is also an important part of the Centre's work.

Companies using ITC's incubation facilities have, in



*Interior of the new Illawarra Technology Centre*

addition to the Centre's specialised services, all the resources of the University of Wollongong at their disposal. This includes access to University equipment, mainframe computer systems, library and all the considerable expertise available in the University departments.

The final service provided by the Centre is a very important one: access to finance and organisations with technology-based support networks.

All in all, ITC offers the type of people and services a fledgling company normally couldn't afford to have on the payroll.

Basically ITC is funded in two ways.

First, ITC's construction and capital equipment costs are funded by \$5m from the Commonwealth Government through the Steel Regions Assistance Program. Recurrent costs are met by a grant from the New South Wales Government through the Department of Industrial Development and Decentralisation and by The University of Wollongong.

The Centre operates as a non-profit-making public company under the umbrella of the University. Its board of directors is made up of representatives from the business, government, union and university communities. The ITC has recently moved to the splendid new headquarters and incubator facilities being declared formally open on the 30th.

Further information from Kathleen Iacurto, Executive Officer, The Illawarra Technology Centre Ltd, Northfields Avenue, North Wollongong, NSW 2500. Postal address PO Box 1144, Wollongong, NSW 2500. Phone (042) 289790. Fax (042) 272171.

### UNION ARCADE OFFICIALLY OPENS TODAY

Members of the general public and students and staff of the University are invited to the opening of the Union Arcade at 3 pm today, Tuesday November 24. The ceremony will be performed by the Chancellor of the University, Mr Justice Hope.

# Department of Civil and Mining Engineering's Mining Research Centre Attracts Grants Of Over \$584,000



*Discussing arrangements of the contract between ACIRL and the Department are (left to right) Lewis Schmidt, Van-Uu Nguyen, Rob Nixon, John Aubrey, Zoltan Nemes-Nemeth, Ernest Baafi and Bill Upfold*

Professor Lewis Schmidt, Head of the Department of Civil and Mining Engineering, has announced that the Department's Mining Research Centre has attracted outside contracts for a total of over \$584,000 so far this year for research work.

The research work attracted centres on the coal industry, and draws heavily upon the Department's expertise in the mining and associated civil engineering areas.

The MRC for 1987 has initiated five major research activities:

- Rapid face bolting
- Expert systems for mine safety
- Flame suppression in mine explosions
- Explosion modelling
- Smoke movement during underground mine fires.

These major projects are funded by mining companies, the Joint Coal Board, and the National Energy Research Development and Demonstration Council (NERDDC).

Other projects include coal stockpile management, and the preparation of environmental impact statements for quarrying operations, including noise studies.

The rapid-face bolting project began this year, having taken a number of years to develop to a stage that it attracted funds. Funding to \$176,000 came from the Joint Coal Board and six mining companies, BHP, Kembla Coal and Coke, Bellambi Coal, Clutha, Huntley and BP Coal, and lasts for four years. The project basically is to develop a roof and face drilling system together with a roof bolt placement procedure such that the rig may be attached to new (and faster) coal cutting equipment, thereby allowing bolts to be inserted in one pass — the drill steel becoming the bolt. Mr P. Standish is a Research Fellow appointed for the project.

Using the considerable expertise within the Department, the MRC has attracted a NERDDC sub-contract for \$150,000 over three years to join in a major project developing expert systems for hazards and emergencies in underground coal mines. Initially, this work is concentrating on mine fires. The staff involved include Dr Baafi, Mr Beatty, Dr Nguyen, Professor Schmidt and Professor Upfold.

A major NERDDC grant to the University for \$91,500 over 1½ years will enable an investigation of failsafe techniques for the suppression of flames from mine explosions. This work includes actual explosion modelling and small-scale tests at the University together with full-scale tests at Londonderry and possibly in China. The member of staff involved is Professor Upfold. This work, in addition to the engineering side, will bring in the health and psychological aspects of working in a water mist.

The mathematical modelling of explosions in underground coal mines has been in progress at the University for a number of years and has previously attracted NERDDC support. This work was previously carried out in association with the Londonderry Occupational Safety Centre, of the NSW Department of Industrial Relations. The current subcontract for \$65,000 over two years is derived from Londonderry's NERDDC Grant and the work brings together staff both in the Department and in Computer Services. The contract allows for further mathematical development of explosions taking into account the three-dimensional aspects of a mine, and incorporating both gas and coal dust burning. Staff involved include Professor Upfold and Mr Ian Piper of Computer Services.

Smoke movement during mine fires has been a long-term problem in mines, the smoke plume often moving along the ceiling against the flow of ventilating air. The Department previously had a NERDDC grant to develop ventilation computer programs taking into account smoke, methane, heat, and oxygen depletion, and the work continues with a sub-contract for \$10,000 from a NERDDC grant to Londonderry of three years duration. Staff involved include Professor Upfold and Mr Ian Piper.

Most of the research monies attracted this year come from the Commonwealth, via NERDDC, and is the result of the long-term research work undertaken here in the direction of mine safety, especially with regard to fires and explosion. The current success is due in part to problems of mine explosions in Australia, especially after the recent Moura disaster, together with a continuous publication record in this field; the most recent publication is being offered in Beijing this month at the 22nd International Conference of Safety in Mines Research Establishments, The Moura Disaster — A Case Study, by Dr Green (of Londonderry) and Professor Upfold.

The Department, in all its works, integrates well with industry. The first project noted is fully funded by six mining companies. For three of the NERDDC projects, Bellambi Colliery, through Mr M. Velzaboer, is involved with the testing program.

In conjunction with Bellambi Colliery another project is under way. It is concerned with the interactive training of mine personnel, using personal computers. This project leans heavily on psychological and educational aspects of training and various philosophies. It is hoped that a NERDDC grant to support this work will be forthcoming. If so, it will be applied primarily to develop interactive training software for mine car drivers.

Most of the work outlined is to be spread over two or three years and will involve staff in both Mining and Civil Engineering. At present five staff are employed on these projects, with funding provided by the external grants. Several higher degree students are following programs of study related to the projects.



## General Notices

### GREENHOUSE EFFECT CHALLENGED

A popularly accepted climatic scenario — the 'greenhouse effect' — has been challenged by The University of Wollongong geographer Dr Edward Bryant in a paper published in the *Australian Geographer*, journal of the Geographical Society of NSW, and in an article in the current (November) issue of *The University of Wollongong Gazette*.

The 'greenhouse effect' postulates that the climate is warming because of an increase in the amount of carbon dioxide in the earth's atmosphere, due to the accelerated combustion of fossil fuels over recent decades. This theory suggests that if present trends continue over the next 30 to 50 years, a global warming of surface air temperature will result in a catastrophic melting of near polar ice and a raising of sea levels of between 20 and 140 cm. This warming would dramatically alter worldwide agricultural production, especially in marginal areas in Australia, and the accelerated rise in sea levels would increase coastal erosion on a massive scale.

Dr Bryant, however, believes the scenario of carbon dioxide warming is not proved beyond all doubt. We do know that climate has been changing in recent decades, but these changes may be completely natural and not at all due to the impact of humans.

His research is based on studies of available world temperature and sea level records, as well as work he has done in the local area on beach erosion at Stanwell Park. He gives several reasons why the evidence for a global warming over the past century is scientifically uncertain, including the fact that measurements are land based and represent less than 30 per cent of the globe, and were taken near cities. A similar warming was experienced during the 13th and 14th centuries when there was little large-scale global industrialisation.

### WOLLONGONG LAUNCHES PEACE AND WAR STUDIES MAJOR

After being approved by Senate and Council, The University of Wollongong has now put in place the formal mechanisms to offer a Major in Peace and War Studies. This is understood to be the first such undergraduate major in Australia. It will be available to students in 1988.

This new multi-disciplinary project will be offered by the Departments of History and Politics, Science and Technology Studies, Philosophy and Sociology. Its aim is to help students acquire skills in the analysis of theoretical, empirical and policy issues raised by the study of peace and war. The program consists of a series of core subjects designed to introduce students to Peace and War Studies and to synthesise their experience in studying peace and war from a range of disciplinary perspectives. Other subjects cover the politics of peace and war; strategic politics; case studies of particular wars, and the relationship between technological change and war.

The approach in the program will be pluralist. In particular, it will lay stress on the philosophy that it is difficult to make any sense of peace without also studying war. Areas covered will include: Conflict resolution at the international, national and community levels; the study of violence and its causes; the history, form, purpose of war and the philosophical and moral issues raised by war; arms races and their political, economic, technological and strategic functions; the concept of peace, implications of it and the strategies for reaching it; and the politics of social change, including the political, educational, sociological requirements for successfully achieving the social objective of a more peaceful world.

### GERMAINE GREER TO VISIT CAMPUS

The Centre for Continuing Professional Education, a Division of Uniadvice at The University of Wollongong, has arranged for Germaine Greer to visit Wollongong on January 20 next year.

Best known for her book *The Female Eunuch*, Greer is of course one of Australia's more controversial writers. She now lives in England and her visits to Australia are rarities.

At 3 pm Ms Greer will deliver a lecture in Pentagon 1. Her topic will be — Australia - A Just Society.

At 7 pm on the same day, a dinner will be held at the Union Building, with Germaine the after-dinner speaker. Her topic will be Women and Politics.

The charge for the afternoon lecture will be \$5 and for the dinner \$30. Tickets may be obtained from the Centre for Continuing Professional Education, The University of Wollongong, PO Box 1144, Wollongong 2500. Further details may be obtained on (042) 270531 or 270484.

The course will stress not only the importance of understanding peace and war at the large-scale level but also the importance of personal empowerment (mechanisms by which individuals may gain personal effectiveness). The course will be available not only at the undergraduate level. A one-year postgraduate Diploma in Peace and War Studies will also be offered.

Further information from Associate Professor Jim Falk, Chairman, Board of Peace and War Studies.

### DEPARTMENT OF COMPUTING SCIENCE

Following in the tradition of Professor R.G. Dromey (*How to Solve it by Computer*, Prentice Hall 1982), the Department of Computing Science at The University of Wollongong has become the most prolific department in the country in terms of the number of Computer Science textbooks published.

The five academic staff members either currently or shortly to be in print are:

N.A.B. Gray, *Computer Assisted Structure Elucidation*, Wiley 1986.

N.A.B. Gray, *Introduction to Computer Systems*, Prentice-Hall 1987.

P.J. McKerrow, *Performance Measurement of Computer Systems*, Addison-Wesley 1987.

P.J. McKerrow, *Introduction to Robotics*, Addison-Wesley.

R.F. Hille, *Data Abstraction and Program Development*, Prentice-Hall 1987.

J.A. Fulcher, *An introduction to microcomputer interfacing*, Addison-Wesley.

L.A. Maciaszek, *Database design and Implementation*, Prentice-Hall.

### ESSAY WRITING COURSE

*Course designed for Year 10, 11 and 12 High School Students, Mature Age Students, and Students entering University or considering doing so.*

20–21 January 1988; 13–14 February 1988; 6–7 February 1988 (year 10 students only).

Held at The University of Wollongong, Social Sciences Building, Building 19, Room G002, 10 am to 4.30 pm. Charge is \$50.

Further information from the Centre for Continuing Professional Education, The University of Wollongong, PO Box 1144, Wollongong, 2500. Telephone: (042) 270956 or 270076.

## General Notices

### FINAL JUDGING OF 1987 CREATIVE DESIGN COMPETITION

This year for the whole of Session II, 23 design groups of first-year Mechanical Engineering and Chemical Engineering students have been working on design problems.

Preliminary judging has been carried out and the four groups listed have qualified as finalists. They will present their designs on Saturday November 28 at a meeting in the Pentagon at The University of Wollongong at 7.30 pm.

Group Members	Design Submitted
L. Melville T. Callinan J. Duncan M. Hale P. Crabbe	Domestic Garbage Compactors
J. Miles R. Milne K. Parkinson	A Macadamia Nut De-Husker
M. Dobbins I. Foy G. Froud J. Kolsky	Improved Access to SRA's Electric Trains
P. O'Brien S. Mitchell P. Overton M. Lucchini	A Post Extractor

The judges who will assess the finalists are: Mrs Kim Draisma, Lecturer, School of Curriculum Studies, Faculty of Education, The University of Wollongong, Mr John Kopetko, Workshop Engineer for Port Kembla, Maritime Services Board of NSW, Mr Michael Lopez, Senior Projects Engineer, Development Engineering, BHP Steel International - Coated Products Division, Dr Jeff Trinkle, Lecturer, Department of Mechanical Engineering, The University of Wollongong.

The final judging is a public meeting and is open to anyone. Supper will be served.

Co-sponsors are BHP Coated Products (\$250) and the Mechanical Engineering Society (\$50).

### MURRAY INVITED TO CHINA

Dr David Murray has been invited to join an international team of plant scientists visiting China in March-April 1988. The delegation will be the guests of the Chinese Botanical Society, who will arrange a tour including botanical institutions, universities and field stations across a wide range of vegetation zones.

The aims of the visit are to promote an exchange of information among leading Chinese botanists and those from other nations, and to provide opportunities for collaboration in the future.

### GRADUATION SPEAKERS – MAY 1988

The time has come around again to invite speakers to give the occasional addresses at next year's graduation ceremonies.

There will be several ceremonies held during the period 10 to 13 May 1988.

Members of the University are invited to suggest possible speakers for these or subsequent ceremonies.

Please forward the names of possible speakers and information on their background to Warren Mahoney, Academic Services Branch (ext 3928) by November 30.

### BETTER HEARING AUSTRALIA RESIDENTIAL WORKSHOP

Introduction to Teaching of Speech-reading to Adults will be held at International House, The University of Wollongong, from Monday November 30 to Friday December 4. Further information from Anna Rousch – phone: (042) 270956 (ext 3956).

### ATTENTION HSC CANDIDATES

The University is considering employing an Administrative Trainee in 1988 and invites applications from persons who have completed the Higher School Certificate or equivalent, or who will complete the Higher School Certificate in 1987. The successful candidate will be given the opportunity to combine tertiary studies with work experience in areas such as finance, personnel, planning and marketing, buildings and grounds, academic services and student administration. The traineeship provides the appointee with an extensive range of administrative experience and offers the trainee scope to specialise in areas of special interests.

A detailed information package outlining the conditions of the traineeship is available by contacting Wendy Raikes, Staff Training Co-ordinator on 270946. It is in the interest of candidates to obtain this information and frame their applications accordingly. Applications close November 30.

## EEO news....

### CAREER DEVELOPMENT TRAINING FOR MEN?

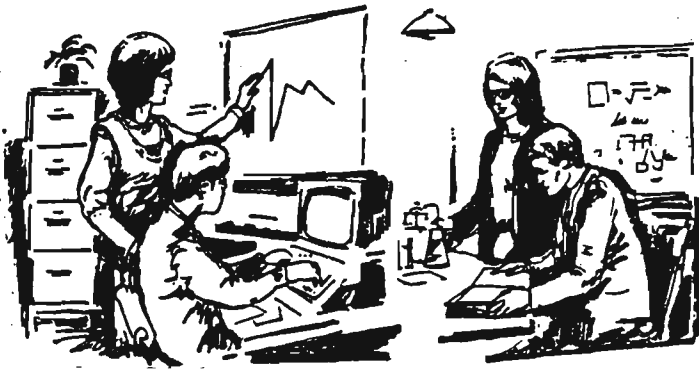
The EEO Unit has recently had a number of comments from disgruntled males on campus regarding the Career Development Workshop for women that we are presently conducting. This course is an Affirmative Action initiative for a specific target group under our EEO Management Plan, and the new Federal Affirmative Action program.

The University's 1984 EEO Staff Survey clearly showed that we have a pattern of women occupying traditional, lower-paid, lower-status jobs. There is considerable statistical evidence available which indicates that being a male in itself is not a disadvantage in employment in the same way that being female is. Did you know that in Australia:

- Women in full-time jobs earn, on average, only three-quarters of male wages?
- Two-thirds of all working women work in just three areas – clerical, sales and service?
- 30 per cent of full-time jobs are held by women, but they hold about 80 per cent of part-time positions which are generally less well paid, with less status, and fewer benefits?

After saying all this, I would like to add that there is no doubt in my mind that men can also be disadvantaged in employment, although not as systematically as women are. There is a great need for all of us, whether male or female, to consider carefully our career directions in order to maximise our potential. So, while I consider it of critical importance to direct our initial career development programs to EEO target groups, I would be quite happy to run one for men as well, provided there are enough interested. If you would like to put your name on a list for such a course early in the near year, call either the EEO Unit or Staff Development.

Peg MacLeod  
EEO Co-ordinator



## Staff Roundup

### CHRISTMAS PAY ARRANGEMENTS

Thursday December 17 will be pay day in lieu of Thursday December 25. Accordingly, due to the restricted time available for salary preparation, for pays due on December 10 and December 17 the following cut-off dates and restrictions will apply:

#### **Pay Day December 10**

All salary variations and overtime sheets to reach Personnel Services NOT LATER THAN noon on November 30.

All time sheets for casual staff and part-time teaching returns to reach Personnel Services NOT LATER THAN 4 pm December 4.

#### **Pay Day December 17**

Overtime sheets to reach Personnel Services NOT LATER THAN noon on December 7.

All time sheets for casual staff and part-time teaching returns to reach Personnel Services NOT LATER THAN noon on December 14.

Time sheets, overtime sheets and part-time teaching returns received after the respective cut-off dates for pay of December 17 will not be paid until 7 January 1988.

Because of the limited time available for processing for pay days December 17 and 7 January 1988 variations to salary deductions, the inclusion of additional deductions and changes to salary accounts will not be processed until the pay of 21 January 1988.

Staff proceeding on recreation leave and requiring pay in advance are reminded that such application must reach Personnel Services NOT LATER THAN three weeks prior to their last day of duty.

Queries may be directed to Bob Hogarth, ext 3930, between 2 pm and 4 pm daily.

### SUPERANNUATION

#### **Retirement Preparation Seminar — Wollongong**

The State Superannuation Board has been conducting Retirement Preparation Seminars in Sydney and in some country locations since 1973.

The seminar extends over two days and covers social and financial aspects of retirement, including sessions on Health, Investment, Taxation, Estate matters, Superannuation and the Roll-Over Option.

The Board is currently surveying the South Coast region with a view to conducting a seminar on 21 and 22 January 1988 at Wollongong.

Fund members who were identified by the survey as being within two years of normal retirement age have been contacted in writing by the Board and invited to lodge their nominations.

Any Fund member, within two years of retirement (including Early Voluntary Retirement) who would be interested in attending a seminar in Wollongong on the above dates is invited to contact this office by writing to the Secretary, State Superannuation Board, GPO Box

4003, Sydney 2001 or by telephoning the Seminar Booking Officer on (02) 2382599.

Attendance and the grant of two days special leave is subject to University convenience and staff affected should ensure that leave will be approved.

It is emphasised that nomination to attend a Retirement Preparation Seminar does not commit a Fund member to retire at a particular time. Arrangements for retirement should be made with the University once plans have been finalised.

### SUPERVISORS OF CASUAL STAFF

To assist Supervisors of casual staff in monitoring the casual staff payments a report will be generated each fortnight for departments showing those casuals whose authority has reached 75 per cent of the commitment value.

This report provides a number of useful details but most importantly highlights the amount which is still available for the casual employee.

The action(s) required by the Supervisor on receipt of the 'Casual Authorities 75 per cent Expired Report' then is:

#### **i. If there is no intention to extend the period of employment:**

Ensure that the casual employee does not work beyond those hours that have been committed. The report indicates the amount of money remaining for the employee.

#### **ii. If the department wishes to extend the period of employment:**

Submit a new authority for the desired extension and quote the order number of the previous authority.

#### **iii. If the employee will not be working for any further period and there are hours remaining on the authority:**

Send a written request to Mr Ted Ross, Budgets Officer, to cancel the authority. This will have the effect of releasing those funds for the department's use.

### ARE YOU GOING OVERSEAS ON UNIVERSITY BUSINESS?

With a number of staff travelling on University business related to the recruitment of overseas students, it is timely to remind those staff of the requirements of income tax legislation. Specifically, where staff are given grant-in-aid payments for overseas travel, substantiation is necessary and travel mentioned in the paper titled 'Changes to Income Tax Legislation' distributed to staff with their group certificates in early July. The University recommends that with extended travel overseas, the staff member should contact his or her own tax agent regarding any taxation implications.

### CURRENT VACANCIES

- \* Administrative Trainee, Central Administration, closing date November 30
- \* Technical Jobs for Women Program — Accounting Clerks (2 positions), Apprentice Gardener, Apprentice Painter, closing date November 30
- + Professor of Italian, Department of Languages, closing date December 15.

Further details for those vacancies marked \*, Lisa Jones, ext 3935, and the vacancy marked +, Ross Walker, ext 3934.

### STAFF CHANGES

#### **New Starters**

Mr R. Rowcroft, Patrol Officer, Maintenance and Services.

Ms B. Pyne, Research Assistant, Education.

Mr L. Beatty, Professional Officer, Civil and Mining Engineering.

Ms B.R. McGoldrick, Word Processor Operator, Geology.

# Research Funds

*The sources of research funds given below are available to members of academic staff. Further information including application forms may be obtained from Annette Read (ext 3386) or Ian Strahan (ext 3079). Intending applicants are reminded that all research applications must be forwarded through the Office of Research and Postgraduate Studies.*

## AUSTRALIAN SPECIAL RURAL RESEARCH FUND 1988-89 RESEARCH GRANTS

The Australian Special Rural Research Council invites applications for assistance from the Special Rural Research Fund.

Funds may be available on a dollar for dollar basis for projects in the national interest or in relation to new industries or industries not provided for by specific Commonwealth/Industry research funding arrangements. These currently exist for barley, chicken meat, cotton, dairying, dried fruit, honey, fish, grain legumes, oilseeds, meat and livestock, pig, poultry, tobacco, wheat, wine grapes and wine and wool.

High priority will be given to market driven projects. These may include aspects of market and development, transport, post harvest handling, processing and production. Projects dealing with post farm-gate issues are particularly encouraged.

Applications close with the University on December 7.

## FISHING INDUSTRY RESEARCH

Applications are invited for funds to undertake research related to the fishing industry.

Applications close with the University on December 9.

## EDUCATION FELLOWSHIPS

The United States Academy of Education has invited applications for the Spencer Fellowship Program designed to promote scholarship in the US and abroad on matters relevant to the improvement of education in all its forms.

Fellows will receive US \$25,000 for one year, or US \$12,500 for each of two continuous years working half-time.

Applications close with the University on December 14.

## NATIONAL AGENDA FOR WOMEN GRANTS PROGRAM

Applications are invited by the Office of the Status of Women for funding of research which reflects the priorities identified through the consultation on the National Agenda for Women.

Applications close with the University on December 17.

## WATER INDUSTRY RESEARCH AWARDS

Applications are invited for 15 postgraduate scholarships to be jointly funded by the Commonwealth Government and the Water Industry. Awards will only be available for research programs which are to be jointly sponsored by industry. The award will provide a living allowance of \$17,764 and a grant of \$5,000 to the research institution to assist with maintenance expenses. The Australian Water Research Advisory Council will provide half these funds; the balance must be provided by a water industry organisation. Awards are tenable for two years for a Masters degree or three years for a PhD.

Applications close with the University on January 7.

## NATIONAL TEACHING COMPANY SCHEME

The Commonwealth Department of Industry, Technology and Commerce has funding available to Australian owned or based companies for employment of graduates in joint projects with Australian tertiary institutions. The scheme is designed to forge links between companies and tertiary education institutions and subsidise the cost of employing high-calibre graduates in projects to improve company performance.

Applications close with the University on 15 February 1988.

## MEDICAL ENGINEERING RESEARCH ASSOCIATION PROJECT GRANTS

MERA is an association of medical engineering and biotechnology organisations. Its purpose is to facilitate Australian research and development through to commercialisation of new medical products and technologies, particularly those with export potential.

Research proposals are sought for 1 to 3 year projects, with significant commercial potential, in the funding range \$10,000 to \$50,000 pa. However large projects requiring funding up to the order of \$1-\$2 million will also be considered, under separate arrangements.

Application forms and a list of MERA's preferred research areas are available from the Office of Research and Postgraduate Studies.

Applications may be submitted to the Office of Research and Postgraduate Studies at any time.

## PIG RESEARCH COUNCIL - SUPPORT FOR EMINENT VISITORS

The Pig Research Council has invited applications for the partial support of eminent visitors who wish to work in Australia for a period of six to 12 months. The Pig Research Council will expect to provide partial support only and will expect additional funding to be provided from elsewhere.

Applications may be submitted at any time.

# Scholarships and Prizes

## JAMIESON AWARDS FOR OUTSTANDING WOMEN GRADUATES

The Australian Federation of University Women, NSW, offers annual awards of up to \$100 each to outstanding women students in any of the universities within New South Wales, completing final or honours year.

Application forms may be obtained from The Australian Federation of University Women - NSW, Suite 919, Challis House, Martin Plaza, Sydney 2000.

Applications close on December 11.

## R.G. MENZIES SCHOLARSHIPS TO HARVARD

The ANU, The Harvard Club of Australia and The Sir Robert Menzies Memorial Trust have invited applications for the R.G. Menzies Scholarship for study at any graduate school at Harvard University during the 1988/89 academic year. The scholarship may provide up to \$US 15,000 depending upon other financial resources available to the applicant.

Applicants should be Australian citizens or permanent residents.

Further information and application forms are available from R.V. Dubs (Registrar), The Australian National University, GPO Box 4, Canberra, ACT 2601, with whom applications close on December 31.

## CHINESE STUDENT EXCHANGE

Applications are invited for scholarships for study at tertiary level in China commencing in 1988 for 2 years. Applicants should be under 35 and proficient in the Chinese language.

Applications and information are available from: The Secretary, Department of Employment and Training, Australia-China Student Exchange Scheme, PO Box 826, Woden, ACT, 2606.

Applications close with the Department on December 31.

## FINNISH GOVERNMENT SCHOLARSHIP

Two scholarships are being offered by the Finnish Government for postgraduate study in Finland.

Applications and information are available from: The Secretary, Department of Employment and Training (Finnish Gov't Scholarships), PO Box 826, Woden, ACT, 2606.

Applications close with the Department on January 15.

## PACKER CAMBRIDGE AUSTRALIA SCHOLARSHIPS

Applications are invited for nine scholarships at the University of Cambridge beginning in October 1988. The scholarships are tenable for up to three years.

Information and application details for scholarships and admission to the University are available from The Secretary, Board of Graduate Studies, 4 Mill Lane, Cambridge. CB2 1RZ, England, with whom applications close 31 January 1988.

## LADY LEITCH SCHOLARSHIPS

Applications are invited from members of the Australian Federation of Women for the Lady Leitch Scholarships in 1988 and 1989. The scholarships, each valued at \$3,500, are open to graduates and are available for study or research in any country or any subject.

Applications close with the University on 1 February 1988.

## BICENTENNIAL SCHOLARSHIPS

Applications are called for by the Australian Federation of University Women for the Victorian Bicentennial Scholarship which will be available during 1988 or 1989. The Scholarship, valued at \$5,000, is open to all members of the International Federation of University Women for study or research for a higher degree or postgraduate diploma at a recognised Victorian tertiary institution. Applications will be received from graduates of any age and graduates who have not yet taken out their degrees.

Applications close with the University on 1 February 1988.

## DAVID SYME RESEARCH PRIZE 1988

Applications are invited for the David Syme Research Prize which is awarded for the most distinguished contribution to Biology, Chemistry, Geology or Physics during 1986 and 1987.

Candidates must submit a record of original research consisting of papers published during 1986 and 1987 and manuscripts suitable for publication embodying the unpublished results of work carried out during this period.

Candidates for this prize must have spent five out of the

## PREVIOUSLY REPORTED IN CAMPUS NEWS

Name	Internal Closing Date
Australian Special Rural Research Fund	November 30
Wellcome Australia - Medal and Award	November 30
Field Sciences Research Facility	November 30
Meat and Livestock Research and Development	December 7
Australian Special Rural Research Fund Grants	December 7
Fishing Industry Research	December 9
Jamieson Awards for Outstanding Women Graduates	December 11
Education Fellowships	December 14
Oilseeds Research Council	December 17
National Agenda for Women Grants Program	December 17
Honey Research Council	December 22

past seven years in Australia and no professor is eligible.

Applications must be submitted to the University of Melbourne by 1 March 1988.

## IRISH GOVERNMENT SCHOLARSHIPS

Applications are invited for the 1988/89 academic year to undertake postgraduate research or coursework at any faculty at an Irish university.

Application forms and information are available from: The Secretary, Irish Government Scholarships, Department of Employment and Training, PO Box 826, Woden, ACT 2606.

Applications close with the Department on 4 March 1988.

## MAHVI CULTURAL FOUNDATION UNIVERSITY PRIZES

Nominations have been invited by the Mahvi Cultural Foundation for University Prizes for doctoral theses and research which deal with Iran and Iranian civilisation. Four awards are available with a minimum value of \$5,000.

Applications close with the University on 7 March 1988.

## INDONESIAN GOVERNMENT SCHOLARSHIPS

Applications are invited for scholarships for one year non-degree program at tertiary level, commencing January 1989. Applicants must be Australian citizens and have the Higher School Certificate.

Application forms and information are available from: The Secretary, Indonesian Government Scholarships, Department of Employment and Training, PO Box 826, Woden, ACT 2606.

Applications close with the Department on 25 March 1988.

## Seminars

### SCHOOL OF INDUSTRIAL AND ADMINISTRATIVE STUDIES

Title: Current State of Research in Expert Systems

Speaker: J.C. Chawla

Date: Wednesday November 25 at 11 am

Venue: Building 19, Room 1014.

## Concerts, Exhibitions and Entertainment

### SUKMA – AS JOHN EVELEIGH SAW IT

The overall impact of the Visual Arts graduating students exhibition Sukma is stunning. The downstairs foyer now includes an extra 21 metres of lateral hanging space, so that with exhibits there is no overall sense of overcrowding. The work is wide ranging, including paintings, drawings, original prints, sculptures, ceramics, jewellery and woodcraft exhibits, the great majority of which form coherent clusters by each individual student.

Outstanding among the painters are Sue Brennan and Sarah Rose. Sue Brennan is an imaginative realist. She includes two self portraits and a three-dimensional screen with five panels on which she has painted three-quarter-size members of her family.

Other aspects of her work include female nudes and a painting in which the artist is holding on to the foot of a levitating figure, while another levitating nun grips on to a chair.

Sarah Rose Jones has developed a very individual way of painting. She draws on ancient myths, legends and biblical stories for her subject matter while their realisation is highly personal. Not least, she often breaks away from the conventional rectangle.

Merilee Swan and Judy Weeks both shared a Sydney exhibition last year in the New Holdsworth Gallery in Sydney. They, too, are well represented. Their work often comes close to abstraction but on close inspection these are identifiable shapes and symbols which link their work to reality. Their paintings are charged with energy (Merilee being the more reflective of the two) and both have a serious approach to colour.

Neil McPherson held a one-person exhibition in the Wollongong City Gallery early this year. His new work is much more spartan and monochromatic than hitherto. He produces on canvases and in monotypes haunting heads which confront the viewer sharply and uncompromisingly.

Annette Somers is the only sculptor represented this year – she shows three grotesque sitting and standing fired clay figures, their feet enclosed in wood stocks, their bodies chained to metal posts. It is not a sculptural piece many would put in their sitting rooms. It is a powerful piece and she has engaged in all the technical problems of modelling heads, torsos, limbs, hands and feet with conviction. In total contrast are two torso metal pieces.

Not to be missed in a section of textiles, in particular some highly sophisticated Shibori Japanese coats and a beautiful quilt, both by Barbara Wyles, and lengths of printed textiles which blend sophistication with dynamic shapes and colours. Also in this section are innovative and beautifully knitted woollen jumpers by Wendy Lee Bell.

### CONSERVATORIUM – COMING UP

#### *Wollongong Town Hall Concert* *Sunday, November 29*

Conservatorium will provide the program for this – the last free Sunday afternoon concert in the Town Hall, sponsored by the Wollongong City Council.

The program will include a large proportion of the more junior musicians, and there will be senior performers too.

#### *Opening of Performing Arts Centre* *January 30*

It is believed royalty will be present for the opening of the Wollongong Performing Arts Centre. The Conservatorium has been asked to arrange for the writing and performance of a four trumpet fanfare.

### GUEST SOLOIST – LISA MOORE

International concert pianist, Lisa Moore, will be guest soloist at the City of Wollongong Symphony Orchestra's final 1987 subscription concert at the Town Hall on Saturday November 28.

Ms Moore will perform the Piano Concerto No. 1 by Brahms, one of the greatest and grandest of all the big nineteenth century piano concertos. John Wayne Dixon will conduct the orchestra in a program that also includes the Beethoven Eighth Symphony and the popular Rosamunde overture by Schubert.

Tickets are available from Wilson's Record Bar, Crown Gateway, and at Ring's Music World, Warrawong Centre and Warilla Grove. Tickets are \$9 each, concession \$5, and a family ticket (up to four people) is available for \$20.

Further enquiries: John Wayne Dixon, (042) 297518.

### EBENEZER

#### *What A Christmas Present*

The immortal story of Charles Dickens' *A Christmas Carol*, with nasty old Ebenezer Scrooge, the delightful Tiny Tim and many other famous characters...

The acclaimed and incredible music talents of Australian composer, John Terry...

And the well-known skills of international puppeteer, Dale Woodward...

Put these all together and you have the world premier of an event called *Ebenezer*.

The production features more than 20 marionettes and uses the 'stage-on-stage' technique where the operators can be seen during the performance. Ghosts and spirits can actually fly on to the stage.

The voices of the characters, both spoken and sung, feature several well-known Wollongong talents, such as Marissa Marianni, Angela and Marianne Patton and Dianne Dunn.

The show opens at the Bridge Theatre, Coniston, in December.

There are only four performances:

Wednesday December 9 at 8 pm

Thursday December 10 at 11 am

Friday December 11 at 11 am

Saturday December 12 at 8 pm

The performance lasts for an hour and a half and is suitable for families (children over seven years).

Prices are \$7 adults and \$4 concession.

Contact Bridge Theatre direct on 296144 for bookings.

## Advertisements

### CHOIRMASTER WANTED

The Dutch Australian Choir (Wollongong) wishes to engage the services of a choirmaster (male or female) beginning in February 1988. This is an ideal opportunity for a skilled music undergraduate/graduate to further practical experience locally with this long-established group. Remuneration is negotiable. For further details please contact the honorary secretary, Mrs Ginetta Arrighi, 714439.

### CAKES AND LETTERS

Again Christmas cakes and letter from Santa are available from Bill Trueman (Library). Proceeds to Lions Club charities. Cakes \$6.80 (1½ k) letters \$1.50 and \$2 overseas. Forms available for letters now.