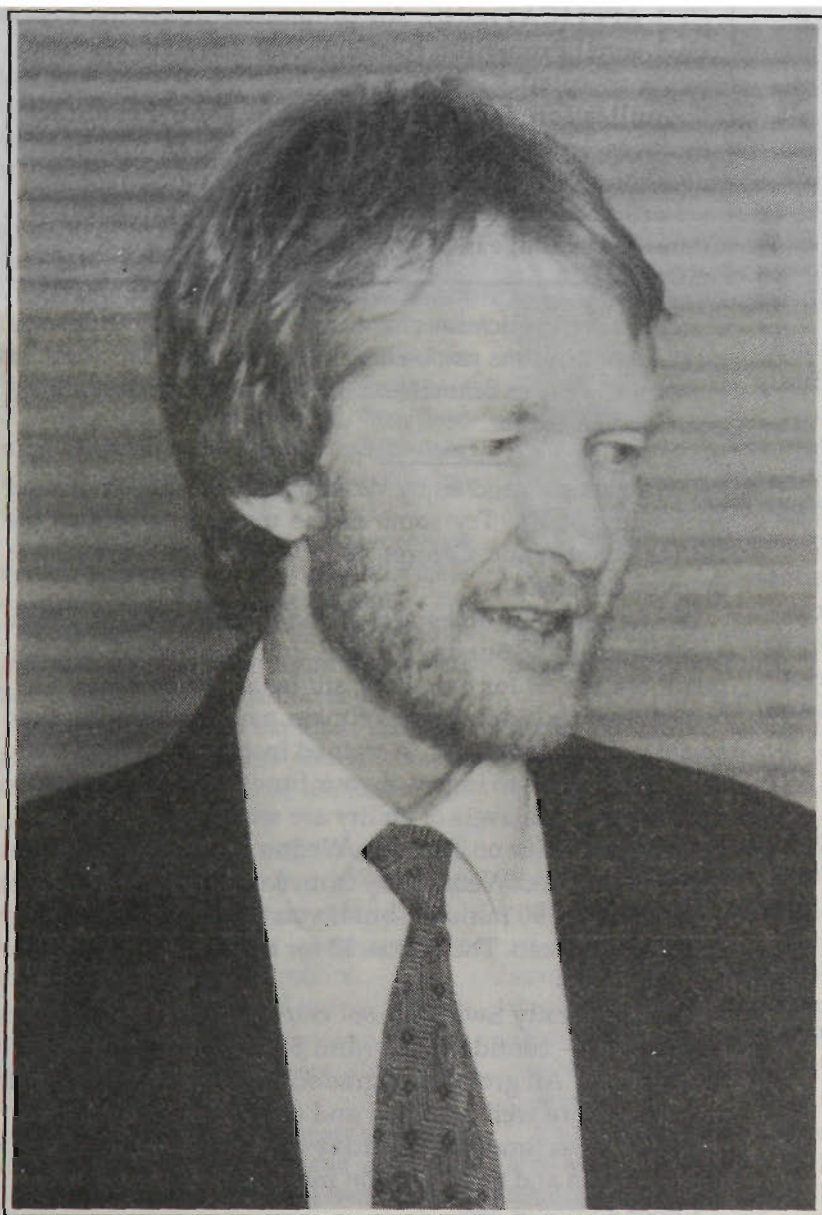




Spotlight on research in public seminar series



Professor Philip Barter – to give first lecture in new seminar series

THE Graduate Faculty has organised a series of public seminars to provide opportunities for the community to hear, in lay terms, about important research programs being undertaken at the University.

Several researchers have been chosen to present seminars over the next few months.

The first will be given by Professor Philip Barter, Head of the Graduate School of Health and Medical Sciences, at 6.30 pm on Wednesday June 19 in the Pentagon Lecture Theatre on *Cholesterol and your heart - lessons from research*

Professor Barter came to the University in 1990 after a highly successful career as a medical researcher at universities and research institutes in Australia and the United States.

His research has been concerned with the investigation of how blood cholesterol is regulated and how it relates to heart disease.

He has published widely on this subject and has attracted large grants from outside the University to fund his research.

Over 600 invitations have been sent out to individuals and organisations in the community, including schools. Some seating is still available. Contact Marilyn Yatras on (042) 21 3943 if you would like to attend. A light supper will be served afterwards.

Another seminar in the series will be given by Professor Leon Kane-Maguire, Department of Chemistry, at a later date to be set. His topic, *Is God left-handed? Right- and left-handed drugs*, will look at the widespread importance of "handedness" in nature.

The occurrence of objects, living organisms and molecules are related to each other in the same manner as are our left and right hands.

Left- and right-handedness has major implications in chemistry, biology and medicine.

If anyone in the community would like to be included in the mailing list to receive information about this seminar series contact Marilyn Yatras (details above).

Campus News holiday deadlines

THE last issue of *Campus News* for this session will be published on June 26.

Deadline for copy has already passed, but the first issue of session two will be printed on July 17, with a copy deadline of 12.30pm on July 8.

Brief News

AGENDA deadlines for meetings of the University's ethics committees are: Human Experimentation Ethics Committee: July 6, September 1, October 27 and December 7. Animal Experimentation Ethics Committee: June 14. and Biosafety Committee: September 1.

THE Centre for Staff Development is offering a program to help staff give up smoking.

In line with the University's policy of establishing smoke-free buildings on campus, those staff who want to give up smoking may undertake this program which aims to create a healthier and happier lifestyle.

The course runs for five weeks: four consecutive weeks for two hours on the same day each week then a booster session one month later. The dates are: July 18 and 25, August 1 and 8, and September 5.

All employees who smoke, but especially those whose work environment is smoke-free, are encouraged to attend. A minimum of 10 staff members must apply before the course will run.

The expected program outcomes include a reduction in the costs and risks of smokers in regards the health and well-being of themselves, others and the shared work environment. The presenter is Employee Assistance Co-ordinator, Industrial Program Service, Michelle Spillane.

Because of the cost to run this course, and the notion that a particular group size is essential for group support, a firm commitment from interested staff is required at least one month before the advertised starting date. Please forward your nomination form to Jan James, at the Centre for Staff Development.

THE 1991 biennial national conference of the Australian Pattern Recognition Society DICTA-91 is being held in Melbourne from December 4-6.

The event will provide an opportunity for any persons with an interest in computer vision, digital image processing/analysis and other aspects of pattern recognition to become informed about contemporary Australian developments in the area, to exchange ideas, to establish contacts and to share details of their own work with others.

Papers are sought for presentation at the conference and publication in the conference proceedings.

For more information contact Australian Pattern Recognition Society DICTA-91, C/- Department of Computer Science, Monash University, Clayton, 3168.

IN FUTURE, University news and views covered by the ABC

Campus News is published weekly on Tuesday during Autumn and Spring sessions

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Gillian Curtis
Telephone (042) 21 3110

Editorial Production:
Kevin McDonald

Deadline for copy is noon on Monday of the week before that of publication

Material for *Campus News* should be sent by Microsoft Mail to Gillian Curtis, or left, preferably, on a Macintosh-formatted floppy disk, or on hard copy in the *Campus News* tray in Planning and Marketing Branch, Administration Building.
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will be heard from Helensburgh to Ulladulla, across the Southern Highlands to Goulburn and even into Sydney.

This follows the launch of a full ABC Regional Radio service in the Illawarra.

ABC Managing Director, David Hill, launched Radio Illawarra earlier this month and opened a new studio in Nowra. Programs heard previously on 2WN 1431 on the AM band will now be heard on FM97.3.

The ABC's Radio National network now occupies the 1431AM frequency. A new transmitter at Knights Hill ensures that all Illawarra residents have a good reception. As part of the new improved service, ABC-FM Stereo has changed its frequency to 95.7FM.

APPLICATIONS for promotion under the Personal Promotion (General Staff) system are now being accepted.

Application forms are available from Personnel Services and should be submitted to the Manager, Personnel Services Branch by July 31.

Further information from Chris Wells, ext. 3944, or Peter Maywald, ext. 3798.

STUDY leave applications for Autumn Session 1992 close on July 5. Applications can be obtained from Lyn Marshall, in Personnel Services Branch (ext. 3117) or through the Administration File Server.

KEEN to keep fit and enjoy Wollongong's only 50m heated swimming pool? Try some of the many activities at the University Aquatic Centre. The water is a warm 24-26 degrees Celsius.

Winter opening times are: Monday-Friday 6am-7.30pm and Saturday and Sunday 7.30am-5pm. The cost is \$2 for non members and \$1 for members, students and children

Activities include swim for fitness, a non-competitive and social swimming group. A trained instructor will give you interesting drills to improve your fitness and correct stroke if necessary. All levels of ability are welcome.

This is available on Tuesday, Wednesday and Friday from 6pm-7.30pm and Wednesday from 6am-7.30am.

Sessions are 90 minutes, but if you wish to swim for only one hour you can. The cost is \$3 for members and \$4.50 for non members.

The University Swim School caters for all abilities from baby water - confidence to Mini Squad and Adult Stroke Correction. All groups are graded for ease of learning our instructors are well qualified and caring.

Winter class times are Saturdays 9-11am and the cost is \$3 for members and \$4.50 for non members.

Other activities are:

- Underwater Hockey - Every Tuesday 7-8pm
- Waterpolo - Illawarra Association winter camp starting in July (Session 2) all team entries welcome.
- University Swimming Club training 6.30-7.30pm Fridays.
- University Swimming & Waterpolo clubs need members. Call the pool on (042) 28 1266 for any enquiries.

Wollongong at the birth of robotic surgeons

PIONEERING research work on the use of intelligent robots in routine orthopaedic surgery has started at the University of Wollongong in the Department of Mechanical Engineering.

Experimental work investigated the possibility of applying intelligent robots in medical diagnosis and surgery.

The robot's undisputed precision can be mobilised to provide solutions to routine orthopaedic surgery and to operations where high precision and minimum invasion is required.

The project has already provoked a great deal of national and international interest.

The impact of such a technique could have in the health service, once fully developed and accepted with confidence by surgeons, is extremely significant.

Realisation of the concept, however, requires substantial injections of funding for both dedicated hardware and software development.

With existing resources a prototype system working on simulation models is expected to be completed by 1995.

A further period of trials and refinements should see orthopaedic operations being performed on cadavers.

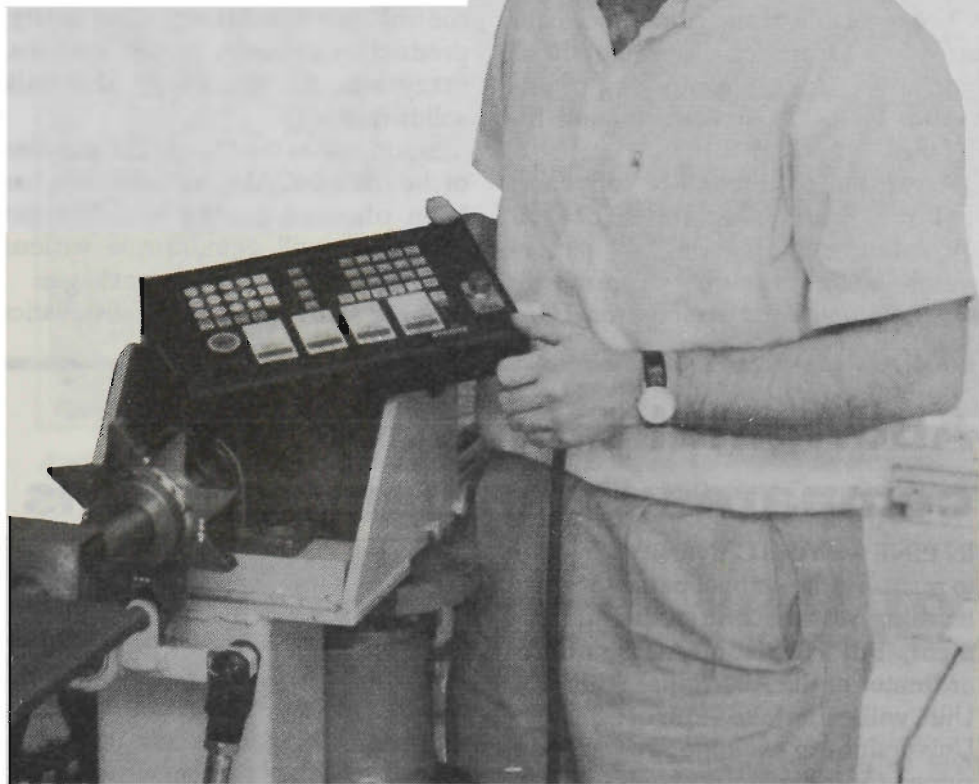
However, it is not expected that surgery on living patients would become everyday practice in the immediate future.

For this purpose, a dedicated robot needs to be designed and constructed with the capability of increased speed of movement and greater accuracy than commercially available robots.

This development will reduce the potential for injury to the tissue and facilitate a fast healing process since less damage will be caused.

The robot's multisensing abilities will scan the area of concern and after the position that needs surgical treatment is digitised the information will be fed into an auto-associative Neural Network with both supervised and unsupervised learning capabilities for partial signal identification.

The probable identifications can then be passed to an artificially intelligent Expert System where knowledge in a



Dr Elias Siores – conducting the pioneering work in robotic surgeons

form of rules will be applied against the possible identifications.

Once the information from sensors is filtered and identified the Expert System can plan an entry path, determine the type of action to be taken and finally carry out the operation with the robot mimicking the surgeon's intelligence and hand-eye co-ordination.

The robot will not depend solely on the real-time information it receives from sensors but will access pre-operational data too determined by functional anatomists and biomechanists, who will provide the input data for the robot controller.

It will also draw on information gathered from the existing ultrasonic scanning facilities and other examination aids such as computer tomography, magnetic resonance imaging, positron emission tomography etc. Only when the strategy has been approved by the specialist surgeon will the robot commence action.

Dr E. Siores is leading the project in association with a team of scientists and engineers which includes Dr G.

Montagner (University of Wollongong, Mechanical Engineering), Professor A. Parker (University of Wollongong, Human Movement Science), Professor S. Tzafestas (National Technical University of Athens, Intelligent Robotics Unit) and Professor W. Gillespie (University of Newcastle, Orthopaedic Surgery), in this fascinating and unique field of research in Australia.

Dr Siores suggested that supervision of the process will still require a surgeon to be in attendance and emphasised that surgeons' own opportunities will be broadened by the increased precision which such robots can offer.

In the future, he added, it is possible that such robots if strategically installed in various remote places in the Australian countryside could carry out complex operations through telecommunication links and on-line supervision by specialists distant from the patient.

Dr Siores concluded that such developments will increase the efficiency of hospitals and make the health service more effective.

Wollongong to host computers in mining conference

THE second Australian Conference on Computer Applications in the Mineral Industry (2nd AusCAMI) will be held at the University of Wollongong from July 10-12.

The objective of the conference is to provide a forum for dissemination of innovative ideas in computing of relevance to the Australian mineral industry.

According to conference convenor, Dr Ernest Baafi of Department of Civil and Mining Engineering, 47 papers were selected from authors from mostly Australia, with contributions from USA,

UK, China, Ghana and Zimbabwe,

The topics included for the three days of the conference are mineral exploration, mine design and planning, data management, rock mechanics, process control and monitoring, mine safety, production systems, expert systems, fuzzy sets, fill technology and bulk solids flow.

In addition to the 13 technical sessions of the 2nd AusCAMI, an exhibition has been planned during which eight companies will demonstrate various mining-related computer packages.

Three short courses in geostatistics

and mine planning, GPSS discrete simulation, and Lotus 1-2-3 spreadsheet are also scheduled as pre-post conference activities.

The course instructors will include Professor Young C. Kim, Department of Mining and Geological Engineering, University of Arizona, Tucson, USA, Dr John R. Sturgul, Managing Director of JRS Consulting Services and Dr Baafi.

According to the conference coordinator, Ms Margaret Prendergast, of Illawarra Technology Corporation, the opening address will be delivered by Mr Lauchlan McIntosh, the executive director of Australian Mining Industry Council, while the keynote address will be given by Dr Michael Sargent, Past-President of the Institution of Engineers, Australia.

Mr Malcolm Burns, Group General Manager, BHP Collieries will deliver the Conference dinner address.

Further information can be obtained from Ms Prendergast, phone: (042) 26 8888; Fax (042) 26 8954.

Aboriginal Education Unit compares Canadian programs

IN LINE with this University's mission to pursue international perspectives in teaching, research and student recruitment, Bill Harrison, Assistant Coordinator of the Aboriginal Education Unit, will undertake a tour of Canadian Universities to examine programs designed for indigenous peoples.

Establishing research and development projects to assess potential for courses for Aboriginal students at the University of Wollongong is part of the Aboriginal Education Unit's 1991-1993 strategic plan.

As faculties become interested in marketing their courses to communities of special interest, their need for advice on preparation and recruitment grows. Canadian universities have a successful record in this field and they have much to share with us.

The Aboriginal Education Unit is currently circulating a discussion paper, developed in collaboration with the Faculty of Law, which is aimed at attracting Aboriginal people to study law at Wollongong.

To further support this proposal, Bill Harrison will compare the strategies used in Canada to recruit and prepare Native Indian people to study law.

There are a number of common elements in the education needs of indigenous peoples around the world and the Aboriginal Education Unit believes



Bill Harrison

the progress made in Canadian universities has immediate application to its current proposal.

Bill will visit The University of British Columbia and The University of Saskatchewan during his trip. To further develop his understanding of the Native Law Programs he will also consult with the Department of Indian affairs and the Legal Services Society of British Columbia.

During his stay, Bill intends to informally discuss the feasibility of student and staff exchange between the Aboriginal Education Unit and Native American Education Centres.

Tony Naughton at Korean conference

TONY Naughton of the Department of Management recently returned from Seoul, South Korea, where he attended the third Pacific Basin Finance Conference from June 3-5.

The conference is regarded as the premier finance conference in the region and this year was organised by the Korean Stock Exchange and the Asian Development Bank.

Tony's attendance continues his personal commitment to research related to the region as well as the commitment of his Department and the University to such activity.

Tony presented a paper entitled *Pricing securities with embedded options in the context of price limits: A study of Taiwan*.

The paper analyses returns in the Taiwan stock market over recent years and develops a theoretical model for pricing shares in the unique environment of Taiwan.

This study forms part of the University's Asia-Pacific Development Studies Research Program.

Employee Assistance Program

PERSONAL problems being experienced by employees or members of an employee's family can seriously affect the employee's private and working life.

The University believes it has a responsibility to ensure all employees perform in a safe and productive manner.

However, the University also has a genuine interest in the wellbeing of its employees.

In 1990 the University introduced an employee assistance program to assist employees to address such problems.

The program offers free, confidential counselling to employees at all levels for a wide range of personal difficulties such as:

- Marriage and family problems;
- Alcohol and other drug problems;
- Emotional stress;
- Interpersonal conflicts;
- Financial and legal worries; and
- Gambling worries.

Employees have the choice of utilising services offered off campus by the independent service providers, industrial program service, or the University counselling service on campus.

The counselling services now offered by the industrial program service are additional to and augment those presently provided on campus.

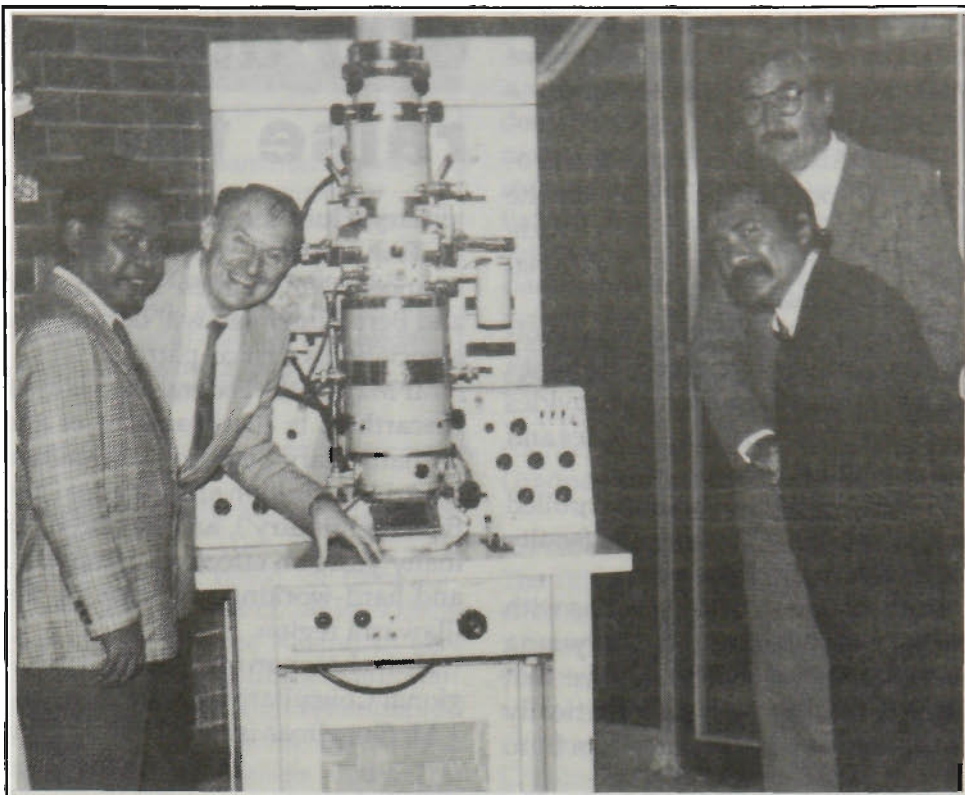
The industrial program service is a nonprofit government subsidised organisation whose operations are endorsed by the CAI, ACTU and both State and Federal Governments.

The counselling provided by both services is in strict confidence.

Briefing sessions regarding the program will be conducted for staff and supervisors over the coming months.

Employees who felt they would benefit from using the counselling services offered are encouraged to seek assistance.

Further information can be obtained from Peter Maywald, ext. 3798.



Arief Bustaman and Basso D Makahanap of PT Krakatau Steel inspect an electron microscope in the Department of Materials Engineering with Dean of Engineering, Professor Tibor Rozgonyi and Professor Nicholas Standish

Indonesian steel visit to Wollongong Uni

SIX months ago senior officers of PT Krakatau Steel, Indonesia visited several Australian universities including Wollongong to assess engineering course quality and industrial relevance for the purposes of upgrading the knowledge of their engineers to meet the challenges of the future.

PT Krakatau Steel is the only integrated steelworks in Indonesia. It is also the largest steel manufacturer in the country, employing some 20,000 people.

It is pleasing to report – and it certainly says something about our university – that the University of Wollongong has been given priority.

Discussions of principles took place recently in Wollongong.

Discussions of course details, venue, method of presentation etc. will be carried out on-site in Cilagon by Professor Nicholas Standish.

Commonwealth Research Funding Schemes

A COPY of a booklet issued by the Commonwealth Government, *Guide to Commonwealth Competitive Research Funding Schemes*, was forwarded to all Deans and Heads of Departments, for information.

Its purpose is to "provide a convenient reference to Commonwealth grants schemes to assist researchers, potential researchers, institutional administrators, government agencies and community and industry groups with an interest in research."

The guide provides information on grants offered on a periodic basis and allocated on the basis of peer assessment processes. The booklet is available to all members of staff for perusal in the Departmental Office. Please make use of it.

PETER WOOD, Manager, Academic Services

THE 600 disabled students enrolled at the University of Wollongong have their own student association – STANDARDS.

STANDARDS is committed to providing support and advocacy for the special needs of students with a wide range of physical, health, emotional or learning disabilities.

The association commends Wollongong University, which welcomes disabled students and which provides special support services, facilities and equipment for them.

There are disabled students enrolled in subjects in every school and faculty of the University.

The association urges persons with disabilities, whether they are young or mature-aged, not to believe that their disability will automatically disentitle them or exclude them from

600 disabled students raise the STANDARDS

tertiary education.

STANDARDS recently has announced that Stephen Martin, MP, and Bert Flugelman will become the association's first co-patrons.

Mr Martin, the Federal Member for Macarthur, is the chairman of the Parliamentary Standing Committee on Administration and Finance ('the Banking Inquiry'), and has been for many years an effective, committed and hard-working advocate for the Illawarra region.

He is chairman of the Illawarra Regional Consultative Council.

Mr Flugelman is a very well-known

sculptor and artist.

Many of his works stand in the University's campus and include The Spirit of Flight, the Lawrence Hargreaves memorial which stands on the escarpment overlooking the campus and the City of Wollongong.

Mr Flugelman is a Fellow of the University, where he lectures in art and sculpture in the School of Creative Arts.

STANDARDS secretary, Craig Wallace, can be contacted by mail at the Students' Representative Council, University of Wollongong, P.O. Box 1144, Wollongong NSW 2500 or by phone (042) 28 1194 or (042) 74 3697 (ah).

NZ Consul visits English Department

THE English Department hosted the New Zealand Consul General, Paul Cotton, and his Public Affairs Assistant, Sharyn Wilson, on May 28.

Mr Cotton accepted the invitation to visit the English Department, to discuss, among other things, the Comparative New Zealand/Australian Literature Course the depart-

ment is offering for the first time next year.

Course co-ordinators, Associate Professor Dorothy Jones and Mr Graham Barwell, and Dr Paul Sharrad were among the members of staff to welcome Mr Cotton and Ms Wilson.

Mr Cotton also met with post-graduate students working in the field

of New Zealand literature.

The Deputy Vice Chancellor, Professor Gerard Sutton, also attended both the meeting and the lunch that followed.

Mr Cotton is very keen to establish close ties between the Consulate and the University of Wollongong and has already been involved in the funding of the English Department's New Literatures Research Centre's Australasian Film Festival, Feast on Film.

Advertisements

Due to the increased demand for this section, in future it will be available only to staff and present students. Anyone wishing to advertise must complete a form in Planning and Marketing, Administration Building. This advertisement will be run once. For a repeat it will be necessary to complete another form.

FOR SALE

88 Magna GLX 5-speed manual, white, with air conditioning, cruise control, roof rack and tow bar. 80,000km good condition. \$10,000 ono. Ext. 3843.

FOR RENT

2-bedroom unit, lock-up garage, corner of Smith and Kembla Sts, Wollongong, \$150 per week. Ext. 3666.

Review of the Student Learning Assistance Centre

THE Vice-Chancellor has initiated a review of the Student Learning Assistance Centre for September.

The review is in line with the University's Review Procedures for Academic Units and is a consequence of the expiry later this year of the contract of the current Head of the Centre.

Full details of the terms of reference are available from the Manager of Academic Services, Peter Wood.

In accordance with the review procedures, submissions are invited from any member of the University community.

Submissions should reach Mr Wood no later than July 31.

Staff Round-up

CURRENT VACANCIES

Lecturer in Electrical and Computer Engineering

Contract Appointment – 2 years. Reference AC91-93.

Closing Date: June 28.
Further details: Ross Walker, ext. 3934.

Public Health and Research Development Committee (PHRDC)

Training and Development Awards
Applications are called for grants to enable training or studying for the advancement of public health research in Australia. Applicants should be looking to received training in research methodology and engage in specific research projects which advance such training. There are several different types of awards; Fellowships for people with experience/training in public health who wish to pursue a higher degree; PHRDC Post Training Fellowships for people who have completed post doctoral research training or a Master of Public Health and are aiming to establish themselves in a career in public health; Scholarships for graduates to obtain formal academic training in public health through an approved tertiary institution. The University closing date is 28 June 28. The External closing date is June 30.

Australian Research Council

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 Lyndal Manton (ext. 3201). Intending applicants are reminded that all research applications must be forwarded through the Graduate Office.

Australian Postgraduate Research Awards

Applications are called for from students studying for PhD/Masters Hons by research, who are Australian permanent residents/citizens. Minimum requirements are first class honours or equivalent. Students may be enrolled for full-time or part-time study. The University closing date is October 31 and late applications will not be accepted.

University Postgraduate Research Awards

Applications are called for from students studying PhD/Masters Hons by research only. Applicants must be enrolling for full-time study and applications from full fee students are welcome. Again minimum requirements are first class honours or equivalent. The University closing date is October 31 and late applications will not be accepted. Forms for the above scholarships are available from the Student Enquiries counter, International Office and the Graduate Office.

Previously Advertised Closing Date

The British Council Travel Grants	Any Time
Australian Academy of Humanities (Publication Subsidies)	Any Time
Clive and Vera Ramaciotti Travel Grants	Any Time
Criminology Research Grants	Any Time
ARC Small Grants 1992	June 17

Continued page eight

Department of Civil and Mining Engineering

Postgraduate Research Seminar
July 25: T. Lu, *Dumping characteristics of reinforced concrete both beams*
Chairman: Associate Professor Loo.
August 1: H. Kavoski, *Unconventional composite beams*. Chairman: Dr Wong.
12.30-1.10pm, Photogrammetry Room - Building 4, Room 138.
For additional information contact Dr Baafi (ext 3031)

Department of Computer Science

Postgraduate Seminar
June 21: Michael Fazzolare, *A Review of Machine Learning*, and Ming Lam Fong, *A Tool for Gantt Chart Manipulation*. Michael Birt Library, 1st floor, Seminar Room 5. 1- 2.30pm.

Education Policy Program

July 19: Ms Jan Hall, *Educational policies and strategies for the gifted and talented child*.
August 16: Associate Professor Malcolm Harris, *Integratation of management and motivation theory*.
August 30: Professor Russell Linke, *Performance Indicators in higher educa-*

Seminars

tion.

September 6: Associate Professor John Hedberg, *Information Technology and education organisation*.

September 27: Dr John Patterson and Mr Gregg Rowland, *Teachers and involvement in policy*.

October 18: Professor Carla Fasano, *Knowledge, ignorance and epistemic utility: Issues in the construction of indicator-system*.

November 1: Ms Nita Temmerman, *Perception of the music community about the role of the Australia Council Performing Arts Board*.

November 14: Mr Ian Brown, *Introduction of design education: Implication of educational policy*.

All seminars will be held in building 21, room 101 at 12.30pm.

School of Creative Arts

Research Colloquia

July 25: Banduk Marika, *Identity and Country*. Banduk Marika gives a view of art in 1991 from her position as an artist from Nhulunbuy, north-east Arnhem Land, in the Northern Terri-

tory.

August 22: Anne Brennan, *Identity and Artefact*. Anne Brennan, a jewellery maker, also writes extensively on craft, personal experience and material culture.

October 31: *Studies in Contemporary Arts Practice and Performance in Australia*. Presented by members of the University research program: Diana Conroy, Ian McGrath, Sue Rowley, John Senczuk, Andrew Schultz, Peter Shepherd and David Vance.

All colloquia are held in Building 24, G01 - Music Auditorium from 4.30-6.30pm. Enquiries to (042) 21 3302.

Postgraduate Seminars for 1991 will be held on May 16, July 25, August 22, October 31. All seminars are in the Music Auditorium from 4.30-6.30pm.

Graduate School of Health and Medical Sciences

June 20: Dr Laurent Lagrost, *Graduate School of Health and Medical Sciences, University of Wollongong. Interaction of the human cholesteryl ester transfer protein with low-density and high-density lipoprotein particles*. Seminars are held in 5.G02 - 12.30-1.30pm. Enquiries and RSVP to Christine Contacos, ext. 3952.

What's On

■ Next session a group of University staff will be meeting to paint and to draw one evening (either Monday or Friday, 6-9pm) a week in a studio in West Wollongong. No teacher; no agenda; no previous experience required. It is simply an opportunity to paint and to draw alongside other people. Further details, contact Peter Smith, ext. 4070 or 3717.

■ Theatre South is presenting The Christian Brothers at the bridge Theatre until June 29. Go back to school and receive a bizarre lesson from a bullying, ranting, cajoling and all too human teacher. Tel. (042) 29 6144 or 29 6758.

■ The Illawarra Garden School is being held in Lecutre Theatre 1, The Pentagon, on July 2. The cost is \$16 which includes a two-course lunch in the Dining Hall. Speakers include Joan Connelly, Clem Rhoden, Ron Andrews and Lynn O'Brien. Enquiries to Mrs Merl Moncrieff, tel. (042) 28 7297 by June 21.

■ Wollongong Workshop Theatre is holding a season of one-act plays. The plays are all new and were written by local writers. The plays are: *The River Runs Deep* by Vesna Malnar; *The Prayer of a Heart* by Paul Rybak; *Hanging by a Thread* by Peter Bird; *Guilty Party* by Brian McGinn. The season will run

on Wednesday June 12; Friday June 14; Saturday June 15 at 8pm. Prices are adults \$8 and concession \$6. Bookings, tel. 85 1811 or Redback Music (The Mall) 29 6169.

■ The Illawarra Committee for Overseas Students (ICOS) has announced its calendar of events for this year. The events are: July 27: Snowy Mountains (one day) \$15 and \$10. Tickets and details are available from the ICOS office in the Union Building next to the Careers and Appointments Service, Monday to Friday 9am-2pm. Tel (042) 21 3158 or ext. 3158..

■ The Illawarra Performing Arts Centre Guild Theatre is preparing for a season of 'Annie'. Directed by Robert Peet, Annie has Peter Shepherd as musical director and Linda Shaw Wilson as choreographer. The season opens Friday July 26 then July 27 (two shows), 28 (two shows), 30, 31, August 1, 2 and 3 (two shows).

■ Open Day - Sunday August 25.

■ Graduation Ceremonies - October 10-11.

Women in engineering bursaries awarded

THE Faculty of Engineering held a women in engineering information night on May 22.

Female pupils from years 9-12, their parents and school careers advisors from South Sydney, Liverpool, Campbelltown, Illawarra, Southern Highlands and South Coast areas attended to learn about career opportunities in engineering. The program focussed on information about the courses available.

During the night four female students received \$500 bursaries. They were: Angela Ede, (Department of Mechanical Engineering), Adriana Leon (Dept of Electrical and Computer Engineering), Katherine Ruth Beaty (Dept of Civil and Mining Engineering) and Angela Joy Dong (Dept of Materials Engineering).

The bursaries, to encourage more females into engineering, were awarded to the student enrolling in the first year full-time program with the highest HSC tertiary entrance rank.

Each of the departments within the Faculty of Engineer-



Bursary winners (from left): Katherine Beaty, Angela Dong, Adriana Leon and Angela Ede

ing and Electrical and Computer Engineering within the Faculty of Informatics took part.

From page seven

NHMRC P/Grad Research Awards June 21
Council on AIDS Training Awards June 21
RACGP - Family Medicine Program June 21
Worksafe Australia (Grants in Back and Hearing Disorders) June 21
Academy of Science Fellowships June 21
NSW Literary Awards 1991 (Play and Scripts) June 21
AESIRB Research Grants June 28
National Campaign Against Drug

Abuse Scholarships June 28
Cooperative Research Centres July 3
GIRD Grants Information and Communications Technology July 5
Electricity Supply Association (National Database) July 12
Academy of Science Conference Funds July 19
Asian Fellowship Scheme July 19
Aust. Institute of Agricultural Science Travel Grants August 9
Sir George Murray Prize August 9
Harkness Fellowships (USA Travel and Study) August 16
Multiple Sclerosis Society

Postgraduate Scholarship Nuffield Foundation Fellowships 1992 August 16 August 30
AFUW Queensland Inc Scholarships September 20
Bilateral Science and Technology Collaboration Program September 20
Drug and Alcohol Research Centre (Syd Lovibond Prize) September 20
Grants Received

Department of Arts, Sport, Environment, Tourism and Territories: Climate Change Program - Professor J Falk - Department of STS, "Greenhouse and the Australian Coal Industry", \$19,960.