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'First' for Electrical and Computer Engineering

This year marks a 'first' for the Department of Electrical and Computer Engineering: a total of five female students, three of whom are from Malaysia, enrolled in the final-year subject, ELEC457 Thesis. This subject represents just over one-third of the work required in a final-year and involves the students undertaking a project and writing a thesis. While the Department has had female students enrolled in this subject in the past, there has been only one other time (1986 when two were enrolled) in the 13-year history of the subject that female enrolments have exceeded one!

The students are:

Norazalina Ab Wahab

Norazalina is one of a number of Malaysians undertaking degree courses within the Department of Electrical and Computer Engineering. She is studying for a BE in Electrical Engineering and is sponsored by the Malaysian Government. Although Norazalina had initially intended to study computing science, she accepted her Government's offer to undertake studies in Electrical Engineering at Wollongong. Norazalina admits to having had an interest in electronics before entering university.

Like her sister, Norazah, who graduated BE in Electrical Engineering in the USA and is now employed by a firm producing remote-control toys, Norazalina will return to Johore to seek employment. Coincidentally, Norazalina's final-year project is on infra-red remote control of a power switch to enable a domestic outlet to be switched on and off from a distance. She has to design the switch as well as the infra-red link.

Sunita Gill

Sunita is also from Malaysia and studying for a BE in Electrical Engineering. When asked why she had chosen electrical engineering, Sunita replied that, although her father, who was an electrical engineer, had attempted to discourage her from selecting it as her career, she had a reasonable knowledge of what a career in electrical engineering involved. Sunita said that she had preferred mathematics and science at school and that engineering seemed the most appropriate choice of a career.

Sunita does admit that early on in her studies, she wondered if she had made the right choice but is now convinced she has. Her project in ELEC457 Thesis is on



Surrounding Nelly Munive's ELEC457 Thesis Project are from left Marzena Singh, Nelly Munive (seated), Sunita Gill, Norazalina Ab Wahab and Saadiyah Saad

electrical machines. She is working on a single-phase, axial-flux permanent-magnet synchronous motor. Her work will include the preliminary design and testing of the machine.

Sunita returns to Kuala Lumpur to seek employment at the conclusion of her studies.

Nelly Munive

Nelly is following in her sister's footsteps (Rosa graduated in 1981) and is keeping up a family tradition in Engineering at Wollongong by studying for her BE in Electrical Engineering. She is working on a project developing an axial-flux generator (using permanent magnets) for a wind turbine. This involved designing the rotor and stator for the generator. Tests are now being

continues overleaf

General Notices

Edwin Thumboo



Professor Thumboo (right) with Associate Professor James Wieland

The New Literatures Research Centre was delighted to have welcomed as Visiting Fellow Professor Edwin Thumboo, Head of the English Language and Literature Department and Dean of Arts and Sciences at the National University of Singapore. Professor Thumboo was at the Centre during May and in June is travelling to other Australian universities under the auspices of Australia's International Development Program.

Professor Thumboo is a major literary figure in Singapore, having edited one of the seminal poetry anthologies of the region, *The Second Tongue* (Heinemann), 1976, supervised the editing of the multi-lingual ASEAN anthology of Singapore Poetry, published criticism and several books of his own poetry.

While at the New Literatures Research Centre, Professor Thumboo has lectured on Lee Kok Liang's

Malaysian novel, *Flowers in the Sky*, and Shakespeare's *Anthony and Cleopatra*, given a seminar on Forster's *A Passage to India*, and contributed to classes in creative writing. He is working on a new collection of poetry and on critical studies of writing about South-east Asia such as C.J. Koch's novel, *The Year of Living Dangerously*.

As part of the NLRC seminar series, Professor Thumboo spoke on 'Singaporean Self-images: Contexts for Transformations', last Friday May 26.

Professor of Nursing

Dr Sandra Speedy, from the Sturt Campus of the South Australian College of Advanced Education, has accepted appointment as Professor of Nursing at The University of Wollongong. She plans to take up this appointment in September.

Centre for Multicultural Studies to help manage new multicultural centre for drug and alcohol education

Caroline Alcorso, Research Fellow at the Centre for Multicultural Studies, has been appointed to the management committee of a new state-wide centre for drug and alcohol education among ethnic minority communities.

The centre, to be located in Lidcombe, will employ four bilingual counsellors to work with the Greek, Arabic-speaking, Turkish and Vietnamese communities, a co-ordinator and a receptionist. It is expected to open its doors in July.

Funded by the NSW Department of Health, the team will conduct drug and alcohol education campaigns among non-English-speaking-background populations and carry out related community development activities. It will also work to sensitise mainstream service providers to the specific needs of ethnic minority groups in relation to drug and alcohol problems.

The foundation management committee will establish the new centre, employ the staff and develop and oversee its work program for the first year.

Inquiries or comments are welcome – please contact Caroline Alcorso on ext 3780.

Women in Engineering from page 1

carried out on the rotor and stator, which were built in the Department of Electrical and Computer Engineering Workshop.

Nelly is currently employed part-time with the Public Works Department on the commissioning of the Port Kembla Grain Terminal.

Saadiah Saad

Saadiah is also from Malaysia, studying for a BE in Electrical Engineering and, like Norazalina, is sponsored by the Malaysian Government. She will return to Kedah, near Penang, at the end of her course to seek employment. Saadiah chose engineering as her career and is the first member of her family in the profession.

Her project work in ELEC457 Thesis is in the power electronics area. Saadiah is developing a device to measure the maximum current which flows into a transformer when the device is first turned on. To test the device she also has to build a controllable switch to enable the device to be turned on at any point in the a.c. cycle.

Saadiah is creating another 'first' for the Department: she gave birth to a son early in May. Her husband is also

studying at Wollongong – in Mechanical Engineering.

Marzena Singh

Marzena is the only one of the five undertaking the BE Degree in Computer Engineering. Marzena came to Computer Engineering by default. Having a friend who was interested in engineering, she visited a careers evening and was persuaded that a career in the Air Force as an Aeronautical Engineer would prove ideal. Her parents, however, were not so convinced. Ultimately she chose Wollongong as it was one of only two universities offering the Computer Engineering course, the specialisation she had selected after due consideration of all the options available.

As a computer engineering student, Marzena's project is of course computer-oriented. Her topic is digital signal processing applications in the analysis of dynamic systems. This involves the writing of a series of programs for use in the development of a transfer function analyser based on correlation. Once she has completed her studies, Marzena hopes to gain employment with one of the large computer manufacturing companies.

The Department is hoping that this 'first' is a precursor for the future for women in engineering.

Cold fusion – the verdict, perhaps, not proven

Cold fusion is a hot topic. The thermodynamic duo, Pons and Fleischman, announced two months ago that they had achieved it. Since then claims and counter-claims have multiplied; the mass media have become the arena for publication of scientific data and peer reviews. If viable, cold fusion could release enormous amounts of energy simply and cheaply.

But is it viable?

Few in Australia are in a better position to discuss this topic than Dr John Boldeman, Director of the Applied Nuclear Physics Program at the Australian Nuclear Science and Technology Organisation. Dr Boldeman, whose PhD studies were under Professor Austin Keane at the (then) Wollongong University College, heads the team at ANSTO investigating cold fusion. He also collaborates with the CSIRO, several universities, and BHP on related projects. About 113 people attended his lively lecture on cold fusion, held at the University under the aegis of the Department of Physics and the NSW Branch of the Australian Institute of Physics.

It is in electrochemical cells that cold fusion is said to occur. In essence, these cells comprise some palladium and platinum immersed in heavy water. The products expected are neutrons (and possibly gamma rays), tritium

Report on Public Lecture and Award Presentation held on Wednesday May 17. Sponsored by the Department of Physics and the Australian Institute of Physics (NSW Branch)

and, of course, energy (in the form of heat). Tritium is already present in heavy water and the extra tritium generated would be extremely difficult to detect. Physicists have been using neutron detectors, 'because that's what they had lying around the lab', in the words of Boldeman, while electrochemists have been looking for heat using the calorimeters 'they had lying around the lab'.

Boldeman listed groups who had observed neutrons and/or energy release: Fleischmann and Pons; Jones et al.; Csikei (Hungary); Texas A&M; Georgia Tech ('The only problem we have now is we think they've withdrawn their withdrawal'); groups in Moscow, South Korea and even a Western Australian mining company! The non-positive cold-fusion teams included Caltec; Princeton; Brookhaven; Harwell; Rutherford; Lyon; JAERI; Los Alamos; Lawrence Livermore; MIT and Bell Labs – quite a prestigious roll-call. Harwell, where Fleischmann is a consultant, had begun work in February, but so far had no positive result to report. Many of these labs are involved in the expensive and difficult task of making plasma, or hot, fusion machines and, as Boldeman put it: 'Before they start writing cheques for three billion dollars they want to make sure they can't do it [fusion] for one thousand dollars.'

A huge inconsistency in the results, even of those championing cold fusion, is in the relative yields of heat and neutrons. If the heat ascribed to fusion is really from that source, the accompanying neutron flux should be

about a million million per second. The highest neutron rates reported have been around one thousand per second.

Such a huge difference could not be ignored, Boldeman claimed, even by undergraduate students in their work. Careful measurements at Dresden had given less than a hundredth of a neutron per second emitted.

The current results from Lucas Heights indicated less than a twentieth of a neutron per second, and by adding a cosmic-ray anti-coincidence device it was hoped to improve the accuracy five times. These limits of detection, Boldeman noted, were far below the neutron flux in a typical room, such as Pentagon 3. The neutron emission predicted just does not seem to be there. 'It's terrible...it's a fantastic disappointment', he bemoaned.

Much technical information was presented on the various experiments at ANSTO and other Australian efforts; further technical details were elicited during question time. Boldeman mentioned that even if cold fusion were realisable, the known palladium reserves would not permit the generation of much power.

It was an excellent talk; clarity of exposition leavened with touches of humour; catching the excitement and confusions of front-line research and illustrating the rough-and-tumble advance of the scientific enterprise.

Before the lecture, Dr Boldeman and Professor Peter Fisher presented awards to meritorious Physics students: First Year Scholarships (1989) to Martin Butson (the Rotary Club of Fairy Meadow Scholarship in Physics), David Leffley and Brandon Pincombe; Staff Prize in Second Year Physics (1988) to Michael Jennings; Staff Prize in Third Year Physics (1988) and AIP Prize to Steve Gower.

Report by R.A. Lewis
Department of Physics

Campus Interview Program

Four weeks of Employer visits through April/May have concluded with 302 students having taken part in the first two stages of this year's campus Interviews.

Also, 44 employers have visited the campus this year with an expected 18 to 20 more due to come in September. The number of employers interested in attending at the Campus Interview Programs has increased by approximately 30 per cent in the past 12 months.

Students attending 'Interview Techniques and Resume Preparation' workshops have also increased this year. Approximately 230 students have taken advantage of the two-hour workshops which are preliminaries to the Interview Program.

Some students have reported that they have already received firm job offers for 1990.

Employers have been impressed with the presentation of the students taking part in the Program and have commented favourably – both verbally and by letter – on the Careers & Appointments Service's organisation at Wollongong University.

Recruiting of final-year students continues all through the year with the smaller companies and 'non-campus attending' employers sending information and requests which are circulated to students via the *Careers Bulletin*, noticeboards, departmental liaison and mail-outs.

It is expected that 20 per cent of 1990 graduates will take part in the Campus Interview Program in 1989.

Uni Chiefs go Back to School

Vice-Chancellors went back to the classroom on Tuesday of last week when they addressed Year 12 students from two Sydney high schools.

The university chiefs visited Sydney Girls' and Sydney Boys' High Schools to spread the word about the value of higher education.

The three Vice-Chancellors – Professor Michael Birt (University of New South Wales), Professor Ken McKinnon (University of Wollongong) and Professor Di Yerbury (Macquarie University), talked to the combined Year 12s from the adjoining schools.

The visit was the first organised by the Australian Vice-Chancellors' Committee in an effort to find out what young people think of universities and to inform them about higher education.

Lectures for School Teachers and Senior Students

(Years 11 and 12) Industrial Arts, Engineering Science, Physics, Chemistry at The University of Wollongong, Building 1 – Metallurgy Building Room 121, 5.30 – 7.30 pm

Dates

Monday June 5: Materials Under Stress; New Materials – Polymers

Tuesday June 13: New Materials – Ceramics; Shaping Materials.

Monday June 19: Design; Failure Investigations – the Materials Detective.

All lectures will aim to link in with, and develop, appropriate aspects of the HSC syllabi. Subsequently, examples of the current application in industry and research of the topics discussed will be presented.

Inquiries – please contact Professor W.J. Plumbridge, Department of Materials Engineering, The University of Wollongong. Telephone: (042) 27 0012.

Farewell Dinner – Professor John Blake

After nearly ten years on campus, Professor John Blake, Professor of Mathematics, and for some years Dean of the Faculty of Mathematical Sciences, is resigning on July 20. A dinner in his honour has been organised for those friends and colleagues who would like to have an opportunity to say farewell.

Date: Friday July 14.

Time: 7 pm for 7.30 pm.

Venue: Common Room (Building No 11), The University of Wollongong.

Cost: \$25 (single) or \$50 (double) covers: pre-dinner drinks and savouries and three-course meal, with orange juice and wine available throughout the meal. Full bar service will be available for those wishing to purchase other drinks.

Tickets: Available from Helen Whiter (Room 15.131, ext 3843) or Paul McGuire (Room 15.127, ext 3814) until July 7. Donations for a gift may also be left with the above mentioned.

Discount holidays

The State Authorities Superannuation Board is offering its members discount rates in the Country Comfort Motel Chain. Arrangements have been made to offer all contributors membership to its shareholder club. This entitles cardholders to a minimum 15 per cent discount off normal tariffs at any of their 18 motels, inns and resorts throughout NSW, Queensland, and the ACT. It also provides members with season holiday 'specials' at reduced rates.

Further information from Lorraine Fowler, Country Comfort/SASB, PO Box 928, Chatswood NSW 2057. Enclose cheque/money order for \$2 to cover postage and handling.

Reading and Rithmetic

In response to my note, announcing the arrival of the newly released second edition of the OED into our library, I was asked why a mere mathematician should be so interested in words.

My first answer is to quote from Paul Halmos, one of the most famous living mathematicians and greatest expositors of mathematics. His book, (*I Want to be a Mathematician – an Automathography*, Springer), starts with the assertion:

'I like words more than numbers, and I always did'.

What he means by this is that he likes *'...the conceptual more than the computational'*. But it must also be remembered that this was written by someone who likes to understand mathematics and *'...to clarify it for myself and for the world, more even than to discover it'*, and he goes on to put a case for using 'words more than numbers' in exposition. He also claims that liking words is a very good indicator of mathematical ability. Now, as the great majority of people using mathematics are involved with exposition rather than discovery, what he says is highly significant.

I should also tell you that Professor Halmos will be visiting our campus about the middle of July. We are trying to arrange a public lecture which could become one of the scholarly events of the year.

My second answer is to tell you something about the essence of mathematics. First, go to the roots: Greek, of course, as mathematics as the science of number is the

oldest of the sciences. You will find that *mathematike* is related to learning and *mathesis* was originally used for any mental discipline. The Greeks, however, realised that what we now call mathematics was more demanding than any other discipline and, additionally, it forced students to think rationally and hence the current exclusive association.

A general overview of mathematics reveals it to be a language, a science as well as an art. Originally the science of numbers (arithmetic) and then the science of shapes (geometry), it has recently provided the beginnings of a science of rational thinking (logic and the computer) – not to be confused with the other sort – and it is now being broadened into a science of relationships (graph theory).

In its creative process – the discovery and description of relationships between patterns, mathematics becomes an art; an art that is very abstract and hence probably closer to music than the other traditional arts. When a mathematician says that a theorem is elegant he is making an aesthetic judgement – in fact, what he means is that the theorem is simple – and if it is most elegant he means that is unexpectedly simple.

In contrast we will confine ourselves only to the first category, mathematics that is, as a language. Look at any of those terrible expressions with integrals and summations all over the place and be reassured that without exception every such expression is simply a shorthand for a statement, perhaps rather long, perhaps very complicated, that can be written out in any of the major languages. And this anecdotal mode was the way

most of mathematics was recorded until the present-day symbolic representation was introduced, beginning very slowly about 500 years ago.

It is at this learning stage of language that many students withdraw. And this is sad, as they have denied themselves the opportunity to look upon the beautiful structures beyond such languages.

My previous article included a quote from René Dubois in which he suggested that the ambiguity of language allowed us to do random trips through out mind and have chance encounters with other fragments of information. The philosopher Wittgenstein described this overlapping between words as 'fuzziness' and suggested that this was the basis for creative thinking. If he is correct then we are indeed fortunate to be speaking our pidgin language of English (which comes from the pure Anglo Saxon with additions from French, Norse and Latin) because English probably has more fuzziness than any other language – this is supported by the observation that English, of all languages, has more synonyms and antonyms than any other.

It can be argued that all patterns (certainly those in nature) exist independently of the observer. Thus human beings can be creative, only in terms of their language constructs. So we are faced with a paradox: we need the fuzziness to be creative but then to display clearly our new way of looking at the world we need to remove the fuzziness. That is one of the reasons for the development of mathematical notation which is the most precise and rigorous of all languages. But any mathematician who continues to be the slave of his notation will simply dry up. Humpty Dumpty gives us some clues as to how to resolve our paradox.

'When I use a word,' he said, in rather a scornful tone, *'it means just what I choose it to mean – neither more nor less!'*

'The question is,' said Alice, *'whether you can make words mean so many different things.'*

'The question is,' said Humpty Dumpty, *'which is to be the master – that's all.'*

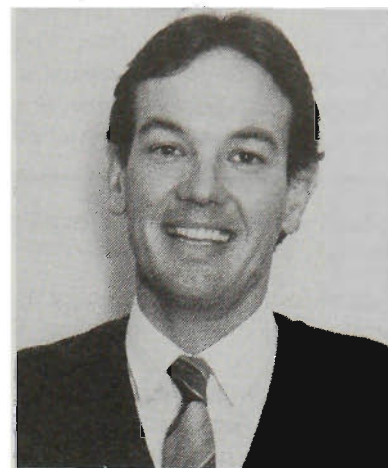
Let us take Humpty's advice and not look at our language as a binding, dried-up set of rules that restrains us to express ourselves like machines. Rather should we regard it as a living part of our human nature evolving and growing in the same way as our other vital parts. For this reason we should try stretching the meaning of our words as we stretch our imagination and be grateful that it is a pidgin language that we speak.

Big Brother in Orwell's '1984' knew only too well who should be master and was very much aware of the vulnerability of his state apparatus to loose creative thinking. So his solution was simple; excise this verbal fuzziness once and for all and have each word defined with precision (by the state, of course) so that there was no overlap whatsoever between words. This would ensure that his decrees concerning the National Interest would be clearly understood and force a Khomeini-Rushdie time fix-in creativity.

Now there is another reason why I feel I have a special interest in words and that is because I am the last Reader employed by the University. This arose because the others confessed to their associations with Professors and were categorised accordingly.

Look up the word 'Read' in the OED you will find that it has a very wide sweep indeed. The definition includes the following – to make out; to interpret; to expound; to make known; to declare; to name; to solve; to understand as by interpretation of signs: to collect the meaning and so on.

Staff Roundup



Craig Grimson's appointment as Information Services Librarian was announced in the issue of 'Campus News' for May 16. Here he is. Craig came from the University of New England, where he was Lending Services Librarian

Staff Development Courses

University Finances for Academic Staff – June 8 (half-day – morning).

Presented by the Finance Section to help you understand the University's financial system.

Career Development for Academic Women – June 14 and 15.

Workshop run by Dr Peg MacLeod to explore the career planning for women in the academic setting and special problems they may face.

Making Research Grant Applications – July 5

Because of popular demand a 'grantsmanship' workshop will be run again in 1989 to help maximise your chances of lodging a successful research grant application. If you wish to attend please submit blue nomination form by June 21. If enough applications are not received by this date the workshop will not be run.

Selection Techniques for Academic Staff – July 12 – 13 .

Workshop which explores University policy, legislative obligations and the skills required to select staff on the merit principal.

If you wish to attend any of these courses please submit a blue nomination form to Shirley Jorgensen, ext 3946.

Whereas 'Reader' – one who reads much: a higher grade of University lecturer (1519). Presumably in 1519 many of the students were very poor readers and hence the name. Judging from recent trends and the influence of the idiot box, this might once again become one of our tasks.

In support of my view of the importance of the arrival of the OED on campus, our Chancellor recounted the following. A very eminent judge was asked what was the most important thing a young lawyer should do to prepare himself to become a judge. The answer was very direct: 'Acquaint yourself with as many books as possible and read! read! read!'

Keith Tognetti, Mathematics

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 Kim Roser (ext 3201). Intending applicants are reminded that all research applications must be forwarded through the Office of Research and Postgraduate Studies.

Grants for Industry Research and Development (GIRD)

The Department of Industry, Technology and Commerce invites applications for Generic Technology Grants in the fields of:

- Biotechnology (closing date June 2)
- Information Technology and Communications Technology (closing date June 2)
- New Materials Technology (closing date June 16)
- National Teaching Company Scheme (closing date June 16).

Scholarships, Fellowships and Prizes

The Academies' Australia-China Exchange in the Humanities and Social Sciences

Applications for exchange fellowships are invited from scholars interested in visiting China under the joint exchange agreement presently operating between the Australian Academies of the Humanities and the Social Sciences and the Chinese Academy of Social Sciences in Beijing.

Applications close with the University on July 14.

Law Foundation of NSW Travelling Fellowships

The fellowships are to enable people directly involved in or concerned with the administration of the law and legal system to undertake overseas study tours.

Applications close with the University on July 17.

EEO news....

What is the Future of EEO?

The *Illawarra Mercury* for May 19 reported on a seminar on *Women, Management and Industrial Relations*, held at Macquarie University. It quoted the Federal Department of Industrial Relations NSW Director, Suzanne Jamieson, as saying that the very able, talented women who are working in EEO should redirect their energies and apply for more traditional management positions.

Writing as someone who has done both, I would take issue with this comment. (As did numerous other speakers at the conference, although that was not reported). It is true that many EEO principles have now been mainstreamed into management policy and procedures, simply because they make good business sense. The rationale for EEO in the '80s' was effective human resource management, coupled with corporate responsibility. So what will be the *raison d'etre* for the '90s'?

Previously noted in Campus News

	Internal Closing Date
National Energy Innovation Awards	June 7
National Soil Conservation Program	June 16
Clive and Vera Ramaciotti Foundation Grants	June 16
Commonwealth AIDS Research Grants	June 16
National Teaching Company Scheme	June 16
Youth Affairs Research Scheme	June 16
R V Franklin Ship Time	June 16
Selby Fellowships	June 16
Academy of Humanities Travel Grants	June 16
Rikkyo Fellowships	June 16
Rothmans Fellowships	June 16
Boden Research Conferences	June 17
Academy of Science UK Exchange Program	June 17
White Research Conferences	June 19
Law Foundation Travelling Fellowships	July 15
Arthritis Foundation Grants	July 17
NASA Correlative Measurement Program	July 17
Matsumae Fellowship	August 17
AINSE Fellowships	August 17
National Multiple Sclerosis Scholarships	August 17
AFUW (Qld) Fellowships	September 16
Australia-Japan Foundation Visits	September 17
Japan Society Exchange Program	September 19
Academy of Science China Exchange Program	November 17
Health and Community Services Research Grants	Any time

Harkness Fellowships

Applications are invited for the Harkness Fellowships tenable for between 12 and 21 months study and travel in the United States. Candidacy is open to men and women in any profession or field of study who are over the age of 21 and Australian citizens.

Applications close with the University on August 31.

Recent demographic forecasts in the USA show that:

- the population and workforce are growing more slowly than at any time since 1930
- as the baby-boomers age, the average age of the population and the workforce will increase from 36 today to 40 in the year 2000
- the number of young workers entering the workforce is forecast to drop by 8 per cent in the year 2000
- in the year 2000, 60 per cent of all women older than 16 years will work
- between now and the year 2000, over two-thirds of new entrants to the workforce will be women
- non-Caucasians will constitute 29 per cent of labour force entrants
- in total, women, non-caucasians and new immigrants are forecast to make up more than 83 per cent of new additions to the workforce between now and the year 2000.

While there are certainly a number of factors which will modify these forecasts in the Australian environment, the data which is available suggest that many of these trends are already evident here.

The implications of these forecasts are wide ranging.

Concerts, Exhibitions and Entertainment

A Celtic dimension

Open Monday to Friday, 9.30–12.30 pm and 1.30–3.30 pm,
Sundays 1.30–4 pm to June 11.

Roughly a third of all Australians, we are told, have blood ties with the Irish people. The current exhibition which is in three parts including works on paper – painting, drawing and prints – by fine arts students from Dublin College of Art in Ireland; lustre-glazed ceramics (by the Scot, Robert Reid – who until recently was on the staff at Glasgow College of Art and is now teaching at TAFE in Wollongong), and a series of finely crafted copies of old instruments by Don McDonald, an Australian also with Scottish ancestry.

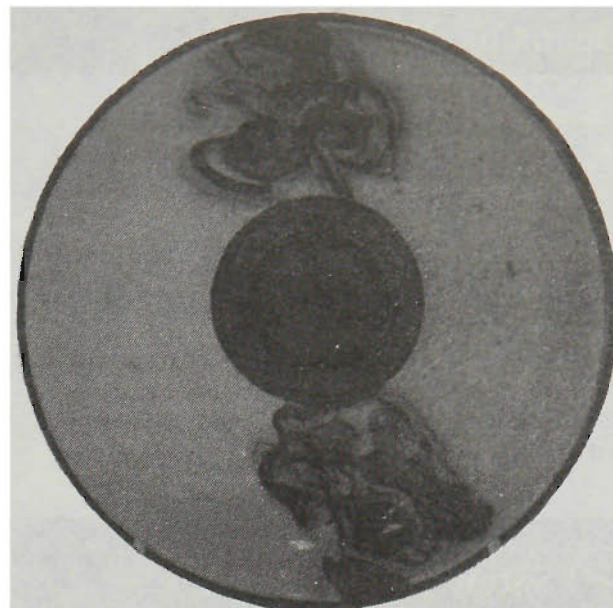
It is fascinating to see that the works by young contemporary Irish artists are overwhelmingly figurative – they are concerned with the industrial environment, the human figure, landscape and still life and are one more example of the rejection of Modernism.

'The only truth for art is to be found not in something extraneous to it, like the forms of nature, but in its own materials, techniques and forms. All reference otherwise is a lie...' *De La Croix Fousey Art Through the Ages*, published by Harcourt Brace Jovanovich, 8th edition, 1986.

Robert Reid's ceramics employ reduced pigment lustre glazes combining inventive decorations, allied to craftsmanship of the highest order. Robert has supplied ten typed pages of notes on his techniques. It is not for nothing that the distinguished Australian ceramicist, Alan Peascod, invited him to teach here in Wollongong. Robert's wife is working full-time as a nurse in the Wollongong Hospital.

Don McDonald has of course just been awarded a Master's degree in Creative Arts for the making of a superb harpsichord after the 16th century Belgian harpsichord by Hans Moermans. Don McDonald also shows two harps – Dulcimers – and a corner cabinet.

Aged 71, Don displays qualities of skill, application and commitment many 20-year-olds would find difficult to emulate. A long-term Salvationist, he is also a member of



Earthenware clay bowl by Robert Reid. The bowl has a lustre glaze and measures some 30 cm in diameter

the University's fourth-division cricket team. He has over 200 wickets to his credit.

Sales area. The newly created sales area, although not quite complete (more shelving and print display unit are to be added), is now operational. It is the first retail area to sell quality art and crafts five and half days a week in Wollongong and is available to all members of the University and general public. Profits from gallery sales are recycled back into it.

Long Gallery, School of Creative Arts, The University of Wollongong.

The Art of Lunch

All performances are free and open to the public and are held weekly on Thursdays (during session lunchtimes from 12.35 to 1.25) in the Music Centre, Building 24, on the western side of the campus.

June 1: New scripts #2. New theatre. Venue: Theatre.

June 8: Third-year Bachelor of Creative Arts students Toni Simon (piano) and Peter Dorich (saxophone) present a concert including music by Ginastera and Francaix.

Inquiries: (042) 27 0987 or (042) 27 0996. Parking: enter by Western Entrance, Northfields Avenue. Admission: free. Convenor: Andrew Schultz.

For your diary...

The City of Wollongong Symphony Orchestra will present its second subscription concert for 1989 on Saturday June 10 at 8 pm, at the Illawarra Performing Arts Centre. A change from the original program has been brought about by the non-availability of the French concert pianist, Jean-David Boulay. However, the orchestra has engaged the young Korean-born Australian pianist, Kyunghye Chung, who will play the Mozart Piano Concerto No 20 in D Minor, K.466.

Other works on the program are the Overture, *Fingal's Cave* by Mendelssohn, and the *Unfinished* Symphony by Schubert. This entire program is thus of the 'standard classics' format.

Tickets available from the booking office at the Performing Arts Centre. Prices are: adults \$15; concession \$11; family (up to four) \$36.

From an EEO perspective, the ability of organisations to adapt, their ability to attract, develop, and retain an increasingly diverse workforce will be critical to maintaining a strong competitive advantage. In the University environment, the same factors apply to the attraction of women students and international students.

A number of large organisations are realising that their EEO programs are increasingly related to the bottom line. Organisations which are able to attract and retain the top resources from a rapidly changing pool will retain the competitive advantage. There is little doubt in my mind that there is a future for EEO. The days of policy change and basic education may be over, but there is plenty of scope for practitioners who are aware of national and international trends and who are committed to moving their organisations successfully into the next decade.

Peg MacLeod
EEO and FOI Co-ordinator, ext 3917

Friends of the University

Annual General Meeting

The Annual General Meeting of the Friends of the University of Wollongong scheduled for Friday May 20 had to be postponed.

The meeting will now be held on Friday June 2 at 5.30 pm in the Kemira Room of the University Union Building.

We regret any inconvenience this change may cause, but look forward to meeting with you on June 2.

Please stay on after the meeting and enjoy some *hors d'oeuvres* and drinks.



Safety on Campus

Site Inspections

The following campus site, safety inspections will take place during June and July.

June 6 – Building 19, Social Science – Jeff Owers, Michael Zanko, Merv Fletcher.

June 13 – Building 110, Observatory – Jeff Owers, Trevor Prior, Robyn Weekes.

July 4 – Building 18, Science (Physics) – Jeff Owers, Aivars Depers, Bob Galvin.

You are asked to contact the inspection team members if you have safety issues you want to raise regarding your building. Inspections start at 9.30 am.

Seminars

Department of Psychology

Date and time: May 30, 12.30 pm.

Venue: Room 10.56.

Speaker: Dr Peter Smith, Department of Psychology, The University of Wollongong.

Topic: *Involvement in change – a viewpoint on applying psychology in industry.*

Department of Mechanical Engineering

Date and time: Wednesday May 31, 11.30 am.

Venue: Building 8, Seminar Room.

Speaker: Dr Yixin Yao, Lecturer, Department of Mechanical Engineering.

Topic: *Varying-Speed Insertion Motion of Industrial Manipulators for Cylindrical Part Mating.*

Date and time: Wednesday June 7, 11.30 am.

Venue: Building 8, Seminar Room.

Speaker: Dr E. Siores, Department of Mechanical Engineering, The University of Wollongong.

Topic: *Intelligent Automated Robotic Welding Using Sensors.*

Department of Materials Engineering

Date and time: May 31, 4.30 to 5.30 pm.

Location: Room 1.134.

Speaker: Mr Ross Nuske, Development Officer, BHP Coated Products.

Topic: *Problems Encountered in Continuously Cast Enamelling Steels.*

Department of Chemistry

Date and time: Friday June 2, 11.30 am

Venue: Room 18.206.

Speaker: Dr Malcolm Binns, Coated Products Division, BHP.

Topic: *Cation-assisted regiospecific and distereospecific conjugate additions of allyl and hexadienyl carbions.*

Biomedical Evening Series

Each seminar will be preceded by dinner at the Union Bistro at 6.30 pm. All those interested are welcome to meet the speaker at the Bistro. Please contact the Convenor so that appropriate table bookings can be made. The seminar begins at 8 pm in lecture room G19 building 35.

Convenor: Dr E.J. Steele (042) 27 0434

Date: Wednesday May 31

A seminar sponsored by Boehringer Mannheim.

Speaker: Dr Caroline Geczy, Kolling Institute of Medical Research, Royal North Shore Hospital.

Topic: *Cytokines and coagulation.*

Date: Wednesday June 14

A seminar sponsored by BioRad Laboratories.

Speaker: Dr Ray Norton, Department of Biochemistry, University of New South Wales.

Topic: *Cardiac stimulatory proteins from sea anemones.*

Biology Seminars Session 1

Biology Department, Building 35 G19, 12.30 pm.

Tuesday May 30 – Dr Andy Davis, Department of Biology, The University of Wollongong, *Title to be announced.*

Tuesday July 4 – Dr Roger Truscott, Department of Chemistry, The University of Wollongong, *How to stop rats getting cataracts.*

Department of Civil and Mining Engineering Research Series

Venue for the seminars will be Room 138 Building 4, Photogrammetry Laboratory. Morning tea will begin half an hour before each session. All postgraduate students of the Department are expected to attend; all others are welcome.

Date and time: June 2, 11.30 to 12.30 pm.

Speaker: Professor C. Gerrard.

Topic: *Strength and Deformability of Rock Joints.*

Date and time: June 9, 11.30 to 12.30 pm.

Speaker: Professor D. Carmichael.

Topic: *Analysis of Construction Operations.*

For further information contact the Secretary, Department of Civil and Mining Engineering, The University of Wollongong, NSW 2500. Tel: (042) 27 0040, Fax (042) 26 0238.

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