Korean Creativity
Restoring Sight to Developing Nations
Russia comes to Wollongong
Is God Green?

Spring/Summer 1992
Keeping in Touch

From the Alumni Officer

May I first thank the alumni who attended the inaugural meeting of the Alumni Association in June for their support and participation. About 30 alumni were present and the constitution (which appeared in the previous issue of the Outlook) was adopted.

Four office bearers were then elected to the first Board of Management. All are graduates and two are also current staff members. The Board’s composition is as follows:

President: Keith Phipps (BA 1978, DipEd 1979) - also President of the Graduates Group, Friends of the University;
Vice-President: Ruth Procter (BA 1984) - also Immediate Past President of the Illawarra Branch, Australian Federation of University Women;
Secretary: Wendy Raikes (BA 1984, MMgt 1990) - employed in the Faculty of Law;
Treasurer: Rosemary Cooper (BCom 1991) - employed in the Faculty of Commerce;
Representative of Engineering Alumni Association: Ted Bosman (BE 1990);
Convocation Representative, nominated by Council: Dr Winifred Ward (BA(Hons) 1985, PhD 1989);
Pro Vice-Chancellor: Professor Lauchlan Chipman (ex officio);
Alumni Officer: Juliet Richardson (ex officio).

One more member of the Board, an academic representative, will be nominated by the Vice-Chancellor. Application is currently being made for incorporation of the Alumni Association.

The new Board of Management has met three times and has discussed various matters including the subscription fee for Financial Membership, the relationship between chapter groups and the umbrella body, and the organisation of an Alumni Christmas Dinner. Please see page 12 for further details.

I am delighted that the Board of Management comprises such a lively and enthusiastic group - their ideas and assistance are very greatly appreciated and I look forward to working with them in the coming months. In particular I would like to welcome Keith Phipps who, as President, will share this page and talk to you directly.

A report on alumni activities appears on page 12, and in the centre of the magazine you will find an application form to join the Alumni Association. Annual membership is very reasonable at $20.00 and your first saving will be a reduced price (to you and your guest) to attend the inaugural Alumni Christmas Dinner to be held on campus on Saturday 21 November.

I hope to see you in November and wish you and your family all the best for the approaching festive season.

Juliet Richardson
Tel. (042) 21 3249; Fax (042) 21 4299

From the President

Hello everyone, and thank you for taking the time to read this first message from the new President of your Alumni Association.

I expect we are all aware of the existence of the well-known Harvard Alumni Association, but what we may not realise is that it took 150 years to develop its current high profile and status. And yet this famous Association had its roots in the enthusiasm and efforts of just a few alumni who loved their alma mater.

We are now in the same position in which those Harvard alumni found themselves 150 years ago, and it’s up to us to build our Alumni Association into a vibrant and continuing one. My aim is the promotion of the University of Wollongong and its welfare, and the establishment of a mutually beneficial relationship between the University and its alumni.

To this end, after my election as President in June, I began by writing to Alumni Associations of a number of universities in the United States, with a view to seeking information and advice on how best to develop our Association in the light of their experiences.

Perhaps the most important piece of advice received was the absolute necessity to establish a database of alumni. You can help by keeping us informed of any change of address and encouraging anyone else you know to be a Wollongong graduate, to do the same. Will you promise to do that for us?

And how about joining the Alumni Association as a Financial Member? An application form is located in the centre of this issue. The annual subscription fee is not high but Financial Membership will entitle you to benefit from special rates in areas as diverse as books and accommodation. You will also be notified about Association activities as they occur.

We are currently promoting an Alumni Christmas Dinner to be held on Saturday 21st November in the new Union Function Centre on campus. Why don’t you form a group with some of your old friends and come along? A special overnight rate at the Northbeach Parkroyal has also been negotiated for anyone wishing to return to Wollongong for the weekend.

If you left the University more than a couple of years ago you will find it very different now. It’s a dynamic campus with new buildings and new landscaping in several areas. There’s even a babbling brook!

I hope to see you and perhaps your family back on campus soon, where you can feel pride in the most aesthetically beautiful campus of the best university in Australia.

I look forward to talking to you again in the first issue of the Outlook in 1993.

In the meantime if you have any ideas about activities for the Alumni Association, please feel free to write to me here at the University. Goodbye, good health, good luck and kindest regards.

Keith Phipps
Restoring Sight to Developing Nations
Professor Fred Hollows and associates build an ocular lens factory in Wollongong

Educational vouchers and their implications
Professor Ken Gannicott analyses voucher scheme proposals

Is God green?
Dr Ann Young looks at the relationship between religion and the environment
The University Centre, located in Sydney's Clarence Street, is a joint initiative by Charles Sturt University, the University of New England and the University of Wollongong to provide the highest quality promotional, administrative, conference and meeting facilities in the Sydney CBD for all staff and students of the partner institutions. The three institutions have combined resources and taken advantage of a favourable rental market to obtain a highly accessible address in Clarence Street, just near the Queen Victoria Building and Town Hall railway station.

Four floors in a new building have been leased and the latest high-tech facilities are available, from telephone and data networks to video conference and presentation equipment. The University Centre was opened in May by the three Vice-Chancellors of the participating universities, who signed an operating agreement to continue the joint arrangement for at least six years.

Those who have visited the Centre are universal in their praise of the building, the interior design and the support equipment. There are no room charges to partner universities for academic or administrative activities. For partner-based commercial activities a minimum charge applies.

The presence in the Centre of the three universities will provide a critical mass which will foster cooperation and collaboration in meeting their mutual objectives.

These objectives fall into three main areas: information (course and enrolment advice, and other services to prospective and current students); education (delivery of courses, and the provision of services for distance and open learning programs); and external relations (enhanced opportunities for contact with other organisations and groups of people).

As well as monthly thematic displays promoting courses of study, there are meetings, short courses, tutorials and weekend schools. A series of seminars in August on Recent Developments in Technology Law was organised jointly by the University of Wollongong and information technology lawyers Gilbert and Tobin. Many of the functions held at the Centre take advantage of the high-tech communications facilities available.
A staff development program for literacy teaching, known as Frameworks, has been developed by two educators from the University of Wollongong and is now being used in hundreds of schools across the United States.

Associate Professor Brian Cambourne and Ms Jan Turbill from the Faculty of Education began work on the program over two years ago in collaboration with Andrea Butler, an Australian educational consultant working in the USA.

Frameworks is a staff development course for teachers of years three to eight. By raising literacy levels among these students it aims to reduce drop-out rates in later school years. The program espouses the philosophy of holistic learning in language education on the basis of a whole language approach.

Traditionally the approach to literacy education has been to break the reading task down into sub skills, which are taught one at a time. Some students have no difficulty in making the connections between these skills, which add up to the ability to read. Others, however, are not able to connect these separate skills to form the 'big picture'.

The method developed at Wollongong begins with the 'big picture' and then individual skills are taught. This enables students to see what they are aiming towards. They are effectively 'immersed in print' by beginning with more complex words and phrases which are then broken down into smaller parts.

Frameworks is a multi-staged site-based program run in eight weekly sessions and is designed to be run by a trained facilitator. It consists of video and audio tapes as well as instruction sheets outlining research and classroom activities.

The program has been marketed through the Illawarra Technology Corporation (ITC). In the USA it is a co-operative venture between the ITC and the Wayne Finger-Lakes Board of Cooperative Educational Services in New York State. This Board represents a consortium of 30 school districts across the state and now has responsibility for marketing Frameworks to schools right across America. To date more than 300 teachers in 200 school districts have done the course, and many more of their colleagues have in turn been trained.

Ms Turbill said that the American teachers have been impressed by the program, with many reporting a rapid improvement in their ability to teach literacy. Professor Cambourne said the Americans became interested in the program after surveys showing the best way to improve literacy was to 'pour resources into training teachers rather than students'.

The program has generated more than $350,000 revenue in its first year and this is expected to double in 1992. While additional stages are being planned in the USA, Frameworks is now also being introduced into NSW, with further interest being expressed by New Zealand and several South Pacific nations.
RESTORING SIGHT TO DEVELOPING NATIONS

Through his Wollongong-based company Miller Precision Toolmaking, Steven Miller, a former technical officer with the Department of Physics, is working with the Fred Hollows Foundation to provide much-needed eye care.

Over two million Africans suffer from cataract blindness each year, and the intra-ocular lens provides a relatively simple means of treating the problem. But the cost of producing and exporting the lenses has meant that many areas have gone without assistance and are continually dependent upon outside aid. While providing temporary aid, Professor Fred Hollows and his co-workers realised that greater numbers of cataract sufferers could be helped if countries in need could themselves provide local care.

So rather than provide the lenses, the Foundation decided to provide the lens factory itself; a fully relocatable factory where lenses can be made as required. Through the Fred Hollows Foundation, which funds medical and developmental aid projects for developing countries, Professor Hollows established the beginnings of the first completely relocatable lens factory with Steven Miller late last year. Miller's company, at that time a small operation in the yard of his home, won the contract for manufacturing the production line in the face of international competition. The project has since turned Miller Precision Toolmaking into a full-time business.

It was after winning the contract that Miller first became aware of the enormity of the task. 'I found that Fred wanted the entire factory to be built, the training of staff from overseas to be undertaken, and all the equipment being transferred over there to be installed.' The initial factory will be trialed in Sydney and then be transported to Eritrea where it will be reassembled. Further factories are planned for Nepal and Vietnam.

The requirements for the factory were simplicity of overall design, and equipment that would be easy to transport and maintain. It needs to be self-sufficient and will be installed in a laboratory presently being prepared in Eritrea.

The factory is designed around 12 to 14 work stations which need only 250 square metres of space. Every item is built to be long-lasting and long-running, with back-up features to prevent dependence on overseas repairs. The design of the lens, which has shown 80 percent success in treating cataracts in Nepal, was chosen for its simplicity, as it can be produced with hand-operated machinery.

Most importantly, the staff for each factory will be local. Eritrean and
Nepalese eye surgeons have been trained in their respective countries and are presently doing hundreds of operations each week. Engineers Andesmeskel Abraha, from Eritrea, and Suroy Dungol, from Nepal (both pictured with Steven Miller) are also part of the Wollongong team; their job is to ensure that technical knowledge is transferred when the factory is established in its new home.

The factory currently in production will be exported to Asmara in Eritrea in late 1992. The Foundation will assist where necessary in the running of the factory for a short period, until the locals are able to manage it on their own. Outside help will then be withdrawn and the factory will be given to the people of Eritrea. However, the association between the Eritreans and the Foundation is expected to continue indefinitely as new technologies emerge.

The cost per lens will be as little as five dollars, and the lenses will be of a quality comparable with those made in western factories. Fred Hollows hopes that the factories will not only help reduce local levels of cataract blindness, but that it will also boost the local economy, through the exporting of lenses to other developing countries. 'We should be effective in our overseas aid. By setting up these countries to help themselves, the process will add to their economic development.'

STUDENTS HONOUR FRIEND AND RAISE MONEY FOR NEPAL

Students from International House have set about raising over $10,000 to build an eye care centre in a remote part of Nepal, in honour of a girl they only knew for a few months.

When their fellow resident, Dechen Dongala, died suddenly in May, the students decided to carry on her dream of treating widespread cataract blindness in her home country of Nepal. So far they have raised $8,000 through barbecues, auctions and other fund-raising initiatives.

Dechen, who died in Wollongong Hospital after suffering a massive cerebral haemorrhage, had only been in Australia for four months. She is remembered as a quiet, studious girl who wanted only to rejoin her medical family in their mission by studying nutrition. Her three brothers are eye doctors and Dechen hoped that by learning about nutrition, which is a contributing factor in cataract blindness, she would be able to complement their work.

According to Cynthia Halloran, Head of International House, the students promised Dechen's brother, who had travelled to Australia on hearing of his sister's illness, that they would build an eye surgery. 'He had trouble believing the students wanted to do something for her,' she said. 'They had asked what they could do - you can't send flowers to Nepal, so they decided to build an eye centre.'

The eye surgery will be the first situated in remote mountain country in northern Nepal. This will mean that patients in remote areas will no longer have to trek for three to five days to the nearest population centre for treatment.

It will be called the Dechen Dongala Memorial Eye Care Centre and will work in tandem with the ocular lens factory planned for Nepal through the Fred Hollows Foundation. Tax deductible donations may be made to the Centre via International House.
New Appointments

The NEW PROFESSORS

John Bern

John Bern took up the position of Professor and Head of the Department of Sociology early this year. Before coming to Wollongong he was Associate Professor in the Department of Sociology at the University of Newcastle. His research covers two main areas of sociology and social anthropology. Over the last 20 years or more he has carried out field work among Aboriginal people in Australia's Northern Territory. He has written extensively on Aboriginal social and political movements, local organisation, land rights and the relations between Aboriginal organisations and Australian governments.

He is currently planning a comparative study on the politics of Aboriginal self-government in Canada and Australia. In the last few years Professor Bern's research interests have also been directed to questions of urban social change. He is engaged in an ARC funded project The Hunter in Transition: Social Readjustment in a Major Industrial Region. This is a study of the political, economic and social changes in the Lower Hunter, particularly those related to the industrial restructuring of the last decade. The research into contemporary Newcastle continues and extends his central concerns with the politics and representation of social change.

Professor Bern is developing the Department's already strong teaching and research base in the areas of gender studies, public and social policy, urban and regional society, cultural studies and the development of indigenous and third world people. He is also keen to develop the links between sociology and other parts of the University in both teaching and research, as well as collaborative links with the community and other organisations.

Jennifer Seberry

Jennifer Seberry has taken up the position of Professor of Computer Science in the Faculty of Informatics.

Whilst Professor of Computer Science at University College, within the Australian Defence Force Academy in Canberra, Professor Seberry set up a Cryptography and Computer Security Group. This was the nucleus for the Centre for Computer Security Research, incorporating the Centre for Communications Security Research. Jennifer Seberry started reading in cryptography and data security about ten years ago and has supervised fifteen honours theses, as well as five successful PhD students whose topics include Security of Statistical Databases and Active Intruder Detection: Some Aspects of Computer Security and User Authentication.

Professor Seberry is a Fellow of the Australian Computer Society, a Fellow of the Institute of Mathematics and Its Applications, and a Fellow of the Institute for Combinatorics and its Applications. She is a member and elected director of the International Association for Cryptologic Research, a member of the Association for Computing Machinery and a member of the Institute for Electrical and Electronic Engineers.

She has spoken on her research in cryptography at international and local conferences and has written over twenty joint papers in the area. She has also consulted for a large number of companies.


While she was Director of the Centre for Computer and Communications Security Research, a secure WAN for the University of NSW campus was built using the LOKI encryption algorithms and secure protocols developed within her group.

Especially interested in authentication and computer security, Professor Seberry and her colleagues have recently received considerable media attention for their ATERB-financed research into 'anti-hacking systems' or User Unique Identification.

New Chair of Academic Senate

Barry Conyngham

Head of Creative Arts, Professor Barry Conyngham, was elected as Chairman of the Academic Senate in July. This is the first time that the Chair of Senate has been elected from the Faculty of Arts.

Dean of the Faculty of Informatics, Professor Sid Morris, was elected Deputy Chairman.

The members of Senate unanimously expressed their appreciation of the service provided by the retiring Chairwoman, Professor Helen Gamble.
DEVELOPING THE UNIVERSITY ART COLLECTION

Prominent Australian artist Guy Warren has recently been appointed as director of the University’s Permanent Art Collection. An artist of immense reputation, with many personal contacts in the Australian art world, he will bring with him enormous prestige and expertise. Here he gives a personal view of the role.

The University of Wollongong is fortunate in having what could well be the most aesthetically satisfying campus in the country. Between the clear ocean beaches which scallop the coast south of Sydney and the dramatic rainforest-covered upthrust of Mt Keira immediately behind, it offers students and staff a rare and very beautiful environment in which to work.

The Vice-Chancellor’s letter of appointment as director of the University’s Permanent Art Collection described my function as ‘to encourage everyone in the University to be interested in visual art and its appropriate display within the University .... and encourage members of the academic community to have a respect for, and an interest in, the aesthetics of their surroundings’.

A tall order, perhaps, but it seems to me a good job description. I certainly hope that I might be able to encourage some students and staff to be interested in (or at the very least to be aware of) the visual arts and perhaps encourage them to look at the works not merely as decorations on a wall, or in a space, but also as vehicles for the communication of ideas.

In those terms, yes, the collection does have a teaching role to play.

But artworks - sculptures, wall hangings and paintings in particular - also have a capacity to uplift the viewer and almost always to affect or alter the environment in which they are placed. They can make life more pleasant, working conditions more pleasing. Although not everyone will always like what I recommend for purchase, I hope they will at least look and perhaps think about the works.

I intend to view all relevant exhibitions in the University’s Long Gallery, familiarise myself with the layout of the various University buildings and the campus generally, and look for potential sites for artworks. I would like to make contact with staff members when possible.

One obvious source for the purchase of works is clearly the exhibitions in the Long Gallery. Works of both students and established professional artists are shown there, and quite often works of real quality are available.

At times there are some very impressive student works, especially at postgraduate level, at extremely reasonable prices. These should be bought. Their owners, the artists, will no doubt be asking a great deal more for them in a few years’ time.

I shall also keep in touch with the works of artists in the wider south coast community and beyond that, the Australian art community, and I shall be using my contacts within the Australian art world in the hope that the odd bargain will occasionally come up - or perhaps a donation or long-term loan.

But mostly the emphasis will be on the works of up-and-coming young artists. I will also continue the policy of collecting some good Aborigi­nal work if it becomes available and would like to find the occasional good piece from New Guinea and other close Pacific neighbours.

How will I choose? No dogmas - good works of many kinds. The criteria? Interesting ideas well carried out with sensitivity, skill, passion or gentle poetic vision. The visual arts come in many forms. Like music. Or literature. Or people.

I’ll be reminding anyone who would like to immortalise themselves and gain immense prestige by donating works of art (of high quality, of course) to the Wollongong University Art Collection, that it is an allowable tax deduction.

EDUCATIONAL VOUCHERS
AND THEIR IMPLICATIONS

By Professor Ken Gannicott,
Faculty of Education

The concept of educational vouchers has been traced back to Tom Paine's volume The Rights of Man published in 1791, but in its modern form the idea originates with Milton Friedman's book Capitalism and Freedom which appeared in 1962. The basic idea is simple: instead of a 'free' education being offered, educational institutions would charge fees and students or their parents would be given a voucher to pay at least part of those fees. The voucher could be spent at any accredited school or university and the education industry would compete to service consumer demand.

Although vouchers have been discussed extensively at the theoretical level, there appears to have been little in the way of practical experiments. Other funding proposals have nevertheless had voucher characteristics. Health care in Australia provides a close analogy. Under Medicare, all eligible patients are able to go to the doctor of their choice with a 'voucher' (or Medicare card) which buys them treatment up to a certain value.

Should students pay fees?

It is true that society as a whole benefits from the provision of education. But contemporary research argues that education is much more profitable for students than for society as a whole, due to the very heavy subsidy from public funds. In Australia, as elsewhere, tertiary education remains a very profitable investment for students.

Moreover, it is now understood that fee-free higher education, far from promoting equity, does nothing of the sort. The abolition of fees in Australia in 1974 made no discernible change in the socioeconomic composition of students. Participation rates in higher education are still dominated by students with professional, managerial and white-collar backgrounds. Across-the-board subsidies to all students at taxpayer expense thus involve a transfer from the poorer to the richer.

We would expect that charging fees would improve efficiency in higher education because it would provide incentives to both students and managers to scrutinise costs more closely. Greater cost awareness among students would also encourage them to become more aware of competitive differences between institutions, who in turn would become more attuned to student preferences.

On grounds of both economic efficiency and equity, therefore, it would be better to charge fees. Generally this means that students will have to borrow the money and that a special scheme of student loan finance will be required, as students cannot normally offer any collateral. Many countries (USA, Japan, much of Western Europe and Latin America) have developed special loan schemes and experience has shown that these have worked well.

What about HECS?

The Higher Education Contribution Scheme (HECS) is broadly consistent with this line of argument. HECS is a loan scheme operated through the tax system with students incurring a tax debit for each year they enrol in a higher education course. Payment of fees up-front (with a discount) is permitted if students prefer to do this.

HECS has many worthwhile features. It requires students to shoulder at least part of the cost of their tuition, but it does so in an income-contingent manner, so that those with low earnings after graduation (whether by career choice or circumstance) may pay less than their educational debt. Moreover, it does not deter the socioeconomically disadvantaged by requiring up-front fees or formal loans with large repayments.

It is worth emphasising, however, that there is still a large element of public subsidy, partly because HECS covers only around 20 percent of the costs of higher education and partly because the real interest rate on the loan is zero.

But HECS has a major weakness. While it meets virtually all the standard arguments about the discrepancy between social and private benefits and equity, its principal deficiency is that it has no mechanism to provide the cost incentives and competition which are usually cited as an important advantage of user pays. Students pay the same HECS charge (set by the Commonwealth) no matter which university they attend and no matter which subject they study.

An important advantage argued for fees is that they will make the education system more responsive to student preferences, as in any transaction where the user pays. HECS cannot do this. While HECS can legitimately be described as a useful piece of microeconomic reform, it has been combined with other government policies which ensure that the pattern of enrolments is determined not by student preferences but by Canberra’s judgement.

Far from being used as a means of freeing-up the tertiary system, HECS has actually been introduced into an environment whose centralised regulatory features were simultaneously being strengthened - the very opposite of what fees are supposed to achieve.
While it seems to be broadly accepted that payment of fees through the taxation system provides a good mechanism for students to meet part of their tuition costs, HECS has not been implemented in a way that captures all the postulated advantages of fees. This is where vouchers are expected to play a role.

**How will vouchers work?**

The Federal Opposition has not yet released final details of what it has in mind, but the main features are clear: HECS will continue to be the mechanism by which fees are collected, and vouchers will be introduced to ensure that the universities are freed-up and can become more responsive to student choice. In outline at least this is very close to the scheme suggested by Peter Karmel, former Vice-Chancellor of the Australian National University.

The main features of the Karmel proposal are that institutions will determine their own course fees on the basis of relative costs and demand; the Commonwealth will provide a number of vouchers covering around two-thirds of a standard fee; the balance between voucher and fee will be paid by the student through a HECS arrangement; institutions will be able to enrol, at full fee, students (both domestic and overseas) who do not secure vouchers; and the Commonwealth would offer scholarships to be awarded on both merit and need.

The crucial issues in any such scheme will be the number of vouchers issued, their value, and how they will be allocated. Karmel favours limiting the number of vouchers to roughly the present total enrolment, with those not securing vouchers able to enrol at full fees. The problem with this is that there is no reason to suppose that the present level of Commonwealth-determined total enrolment has any intrinsic value.

The 'pure' form of voucher implies that all those qualified and wanting to go to university should receive a voucher, with student choice of costs and benefits determining total enrolment. The equity implications of distinguishing voucher from non-voucher students (chosen how?) are disturbing. But issuing sufficient vouchers to clear the present excess demand for tertiary enrolment in Australia, while still holding public expenditure at roughly current levels, implies that the gap between voucher and fees will increase. This leads through simple arithmetic to increased HECS payments.

Regarding the value of the voucher, Karmel favours setting it at a percentage of standard fees approved by the Commonwealth, where those standard fees differ by subject. This seems sensible. No differentiation between subjects (as with the present HECS arrangement) obviously sacrifices an important element of real cost differences that ought to be part of a student's decision-making. At the other extreme, a flat rate voucher will deter students from entry into the expensive subjects by opening up a large gap (and hence a large HECS obligation) between voucher and fees.

**Implications for the University of Wollongong**

The crucial issue for a regional institution such as Wollongong is likely to be the method of allocation of vouchers. Vouchers allocated to institutions would be consistent with the idea of student preferences guiding institutional size and direction, but might reinforce the position of larger or higher status institutions. It also seems likely that the Coalition would permit vouchers to be redeemable at private institutions, so allocation to individuals would allow private ventures to flourish.

Vouchers allocated to *individuals* would be more consistent with the idea of student preferences guiding institutional size and direction, and might reinforce the position of larger or higher status institutions. It also seems likely that the Coalition would permit vouchers to be redeemable at private institutions, so allocation to individuals would allow private ventures to flourish.

While the large metropolitan universities could be comfortably assured of being able to cover the full range of traditional offerings, smaller institutions might only be able to make a living by evolving into more specialised institutions: liberal arts colleges, two-year colleges and the like, much as in the United States.

Karmel suggests a 50/50 relation between individual and institutional allocation, but it seems unlikely that the Coalition would forego the opportunity to put more vouchers directly in the hands of students and thereby allow the market to test the developments of recent years. A very difficult period of change for tertiary institutions would be the inevitable outcome.

A final point. It makes little sense to introduce a voucher scheme without simultaneously freeing-up other parts of the tertiary system. In the Australian context this means more flexible staffing and salary arrangements. If vouchers arrive, enterprise bargaining will not be far behind.
Benefits of joining the Alumni Association

Following the inaugural meeting in June the office bearers elected to the first Board of Management (see page 2) have been busy on your behalf. The relationship between the main Alumni Association and the developing chapter groups (eg Engineering, Commerce) has been the source of much discussion, particularly regarding membership.

The Board has resolved that membership of all alumni groups (or as an individual) will be available by joining the main Association as a Financial Member through payment of a common subscription fee. This annual membership fee has been set at $20.00 initially, and all eligible alumni (i.e. graduates, diplomates and former staff) are urged to consider joining. Alternatively you can join for a five-year period at $95.00. Current students and staff may also join as Associate Members at the same rates.

You will be entitled to voting rights within the Association and you will also be eligible for a number of special benefits which are outlined in the membership application form located in the centre of this issue. Please support your University and become involved by joining - the membership fee is very reasonable at $20.00 per annum.

And why not come to the first Alumni Christmas Dinner to be held at 7.00 for 7.30pm on Saturday 21 November in the Union's new function centre? You could get a group of old mates together and have a look at how the campus has changed. To Financial Members of the Association the cost will be $25.00 per head for the Christmas smorgasbord. To non-members the cost will be $30.00 per head.

If you join and come to the dinner you have already saved $5.00! If you live outside Wollongong you could also stay at the Northbeach Parkroyal at a reduced rate (See insert between centre pages).

Engineering Alumni Association

The inaugural meeting of the Engineering chapter was held in June at a highly successful dinner at the City Art Gallery. Over 60 people attended and a Management Committee was elected as follows:

President: Glenn Mealey; Vice-President: Mark Bell; Secretary: Ted Bosman; Committee Members: Ziad Dakkak, Richard Dwight, Gary Murphy, Mohsen Salaheldin, Lewis Schmidt and Jon Thompson.

The Committee has met three times since and are asked to pass on the word to friends and colleagues whose addresses we may not have.

Are you a recent graduate seeking employment?

The Careers and Appointments Office continues to offer assistance to graduates for career planning and employment decisions into the early months of the first year after completion of their studies. There has been an increased number of students requiring longer-term assistance this year as a result of the recession.

Graduates should be aware that we appreciate their difficulties. In fact the Careers and Appointments Office would like to know of any graduates who completed their studies last year and are seeking employment. If you are out of work at present (or know anyone who is) then contact

---

Glenn Mealey, President of the Engineering Alumni Association

---

About 120 graduates and staff attended a reunion for alumni from the Faculty of Commerce in early July. After formal presentations in the Hope Theatre by the Vice-Chancellor and the Dean of the Faculty, the guests enjoyed catching up with old friends in the Union Bistro. Two business meetings have since been held to discuss the establishment of a chapter group for Commerce alumni.

A reunion for alumni from the Faculty of Education will be held on Friday 27 November in the Union Bistro. Alumni for whom an address is held will be invited and are asked to pass on the word to friends and colleagues whose addresses we may not have.

A series of forums is planned which will examine strategies for employment options. Registration with the Careers and Appointments Service can also be of assistance, particularly when employers send requests for graduates prepared to start work immediately.

The initial services to graduates out of work are currently being extended through the Alumni Association. The aim is to provide ongoing assistance and the opportunity to develop special networks via alumni contacts.

If you are out of work at present (or know anyone who is) then contact Patricia Webster, Careers and Appointments Officer at the University, on telephone (042) 21 3324.
Kamala Limumethiee
MCom

Kamala returned to her home city of Bangkok after completing her Master of Commerce degree last year. She then applied for a position as Sales and Marketing Assistant with The Imperial Family of Hotels who were seeking qualified staff for their new hotel in Bangkok.

The Imperial Family of Hotels is a chain of ten hotels in Thailand under the name ‘Imperial’ which are owned and managed by Thai people. Kamala is employed by the Imperial Queen’s Park Hotel, currently under construction. When it is completed later this year it will be Bangkok’s biggest hotel with over 1,400 rooms.

Although the hotel has not yet opened, Kamala has been kept busy since her appointment earlier this year. The hotel’s management has a policy of training all new staff, regardless of their level, in one of the smaller resort hotels in order to familiarise them with all aspects of a hotel’s operation. Kamala spent two months at three hotels in southern Thailand where she says she had to clean guests’ rooms, work in the garden and the engineering department and then as a waitress in the restaurant.

Kamala is now back in Bangkok in her marketing position which currently involves contacting everyone who has been a guest in the existing Imperial hotels. Kamala enjoyed her time at Wollongong University and says her degree has undoubtedly assisted her career. ‘It not only provided me with knowledge from books but also gave me an understanding of your lifestyle, which I think is even more important than the degree’.

Michael Dorahy
BSc

After completing his science degree at Wollongong Mike moved to Melbourne to work as a Research Assistant in the Department of Applied Mathematics at Monash University. In 1971 he joined Computer Sciences of Australia where he worked on a variety of computer systems projects in the public and private sectors. Since 1986 he has worked in Melbourne for DMR Group, specialising in information technology planning for large organisations. He and his wife Carol would be pleased to hear from any old friends who might be passing through.

GRADUATE’S RIDE-ON TRAIN

Four years ago Paul Buchhorn made a train from a large cardboard box that had housed the family’s new refrigerator. Not content with this, he promised his five-month old son, Timothy, that he would make him the best train ever.

On Open Day, visitors to the University saw the lasting obsession of a mechanical engineering graduate in action. Paul, who graduated in 1980 with first-class honours in mechanical engineering and was awarded the University Medal, has spent his spare time constructing a miniature train complete with engine and three carriages. He brought them on to campus on Open Day to give children rides and to promote his old Department. Paul is currently the engineering manager at Metserv, a major contractor to the steelworks. Describing himself as a ‘frustrated engineer’ he explains that the engine is powered by a postie’s step-through motorbike. He worked with plywood and sheet-metal to shape the engine and later the carriages.

Timothy’s name soon graced the first carriage, but then Benjamin was born and two years later, Katie (now eight months). Happily Paul has built three carriages, but he maintains there will be no further additions - carriages or offspring!
DAVID HERRIDGE
BCom(Hons) 1991

David Herridge clinched a cadetship with the Reserve Bank over some 500 other hopefuls while completing the final year of his Bachelor of Commerce degree two years ago. He graduated with second-class honours in economic management and has since worked his way into a key position with the bank’s supervising section.

David is profoundly deaf. Although he was born with less than 1 percent hearing, he speaks well, has learnt to lip read and wears two hearing aids.

‘Unfortunately one of the limitations is not being able to use the telephone,’ he says. ‘But people at work are very helpful and they take messages for me.’

That inability did not stop David from keeping in touch with his family whilst he was a student at Wollongong, thanks to the aid of a tele-type machine. The telephone receiver is placed into the tele-type unit and a keyboard is used to type a message on a display screen.

The message is then transmitted to an identical machine at the other end. After discussions with its EEO officers, the Reserve Bank recently purchased two tele-type machines (TTY) - one for David and the other for the switchboard so that hearing impaired people with a TTY can contact the bank. ‘The TTY now provides me with a priceless link to the external environment,’ says David.

When he needs to contact other sections in the bank David pays personal visits, whereas his colleagues tend to use the telephone. He says this is to his advantage as it helps him to cultivate friendships and understanding.

In his job David analyses policy and conducts research and development. ‘An important aspect of my work involves collecting information on how countries supervise their banks,’ he says. ‘But I’d like to move into other areas and broaden my experience.’

Late last year David was invited to the launch of the federal government’s Disability Reform Package. He took this opportunity to make a submission reminding the government that there are people with ‘hidden disabilities’ such as the hearing and visually impaired and those with RSI or restricted movement.

‘These people often have special needs which are different from those whose impairment is visible,’ he says.

Since completing his studies David has become increasingly involved with issues surrounding the hearing impaired. He has assisted the Shepherd Centre - a school for deaf children and one of his old schools - with its publicity drive, which included an interview for 60 Minutes. He has also been asked on a number of occasions to speak to parents of newly-diagnosed deaf children, and to deaf teenagers who are uncertain about their future.

David is also interested in the operation of EEO and its effectiveness. He says that although EEO has provided disadvantaged people with greater job opportunities, there is another barrier to be remove - the ability to advance within an organisation. ‘I would like to become more involved in this area,’ he says.

Earlier this year David felt he needed more social and professional stimulation. So he joined Rotaract, the youthful affiliate of the Rotary Club. ‘Much to my surprise, I was given the portfolio of Professional Development. Ever since, I have been a busy member. The challenge is to make Rotaract more interesting in order to attract new members.’

David comments that it has been a struggle to get this far and that it will always continue to be that way. ‘But that is part of the challenge,’ he adds.

Parts of this article are based on an article by Suzanne Mostyn which appeared in the Sydney Morning Herald on 23 May 1992.
Robyn Rowland is a social psychologist and feminist who has been studying the social and psychological consequences of reproductive technologies for nearly ten years. She is also a poet of some note.

In 1984 Robyn created international controversy when she resigned from her position as Chair of the Committee to Co-ordinate Social and Psychological Research into Donor Programs at the Queen Victoria Hospital in Melbourne. She resigned in protest at what she described as the 'morally reprehensible reproductive techniques' being used by some scientists. Since then her unwavering opposition to programs such as IVF has brought public attention to the science of reproduction, and to herself.

Robyn grew up in Shellharbour, and, after completing a BA (Honours) in psychology at Wollongong University College in 1974, she tutored in psychology and women's studies at the newly-formed University of Wollongong for three years while beginning work on her PhD in psychology.

In the mid seventies Robyn was the student representative on the first Wollongong University Council. She was also the first woman to win a University Blue for swimming.

Teaching at the University of Waikato in New Zealand for three years before returning to Wollongong to graduate in 1981, Robyn has since travelled extensively. She is involved in many research groups and organisations concerning women's issues world-wide.

Her involvement with the social and psychological aspects of reproductive technology research gradually led Robyn to become appalled at what she saw as 'a real degradation of the experience of pregnancy,' and at the lack of concern for women who undergo IVF and similar programs.

'For women, the cost is high. For ten years I have talked to women who have been through infertility programs. The great majority - even those who have had children as a result - have found it an incredibly stressful and invasive experience,' she says.

The result of her research, a book titled Living Laboratories published earlier this year by Pan MacMillan, questions the ethics of the science of reproduction. Depicting what Robyn describes as scientists with 'tunnel vision and a refusal to see the social implications of what they are doing,' the book has furthered her controversial status with its confronting analysis of reproductive and genetic engineering and related issues.

This is an approach which Robyn hopes will help in creating awareness about the technology. 'It becomes shocking because all the information is viewed in one place; you can see where the technology could lead, seeing the interrelationship between IVF, genetic engineering, surrogacy and the control of humans.'

Not all of Robyn's books concern the morality of the science of reproduction. Her first book Filigree in Blood is a collection of 63 of her poems, many of which were written in Thirroul while she was studying for her PhD. In fact Robyn has been widely published as a poet as well as a social critic.

Her commitment to women's issues has led Robyn to establish women's studies courses in three universities in Australia and New Zealand, and she is currently Associate Professor in Women's studies at Deakin University. In May of this year she was successful in receiving funding to establish the Australian Women's Research Centre at Deakin and is its Director. She is also currently working on the pros and cons of childhood vaccination.

A further book of Robyn's poetry, Perverse Serenity, is being republished this year by Spinifex Press. It deals with love and passion. Whether it be in poetry, life or her commitment to women, passion is the hallmark of Robyn Rowland's work.
When she was a child Sung-Sook Hwang learnt about the history of Korea, and the history of her family, through the stories told by her grandmother. And they are stories that Sung-Sook, a recent master’s graduate in textiles from the School of Creative Arts, has never forgotten.

Sung-Sook grew up in Seoul with sketchpad and pencils firmly in her hands. Despite encouragement towards a career in medicine (her two sisters and brother are medical specialists), Sook completed a four-year degree in textiles and then worked as a fashion designer. But she found it boring designing dresses to order. ‘I wanted the artistic, not the commercial,’ she says. Longing to travel and to further her studies in a different culture, Sook toured France, Italy and Germany, but felt no affinity for the places she visited. ‘They were not my country.’

Aware of Australia’s mixture of cultures, Sook applied to the University of Wollongong as it offered the only textiles course that gave her the chance to concentrate on her creative work. She was accepted to do a Master of Creative Arts, and although she knew no English and few people, Sook believed living in Australia would be beneficial for both herself and for her two young children.

Quiet and softly-spoken yet determined, Sook had to face more difficulties in her studies than most. As well as learning both to speak and write in a new language - ‘my children are already better than me!’ - Sook has balanced the roles of mother and full-time student. ‘It has been very hard work, concentrating on my studies. I can express and explain about myself, what is inside, through my creative work. But my son said to me ‘we want mum’ - not a student!’

To Sook, the practical component of her masters degree was the most important. Drawing on both her cultural and personal history, the inspiration for her final exhibition of a collection of seven traditional Korean robes came from her grandmother’s stories,

‘My grandmother told me about her eldest son, my uncle, who had been taken prisoner in World War II. She also told me of the last crown Prince of Korea, taken away from my country for 56 years. When he was returned to my country he was ill from anxiety, and he couldn’t feel - he felt nothing at all.

‘My uncle was my grandmother’s prince. The last prince’s mother may have felt the same as my grandmother.’

Sook tells these parallel stories in the sequence of the robes, which are the traditional costume of Korean kings and princes. As the symbol of royalty, the dragons on each robe represent the prince, with colours and motifs according to Korean symbolism illustrating the major events in his life. Inside each robe, the story of Sook’s grandmother is told on the lining, through silk-screened photos and a carefully embroidered poem of dedication in Korean script.

The robes, made from bleached calico, were initially dyed and silk-screened, with each dragon hand and machine-stitched to the robe. Symbolic emblems were later added with hand and machine embroidery. Sook plans to keep the collection of robes and their two stories together, and on exhibition in her home.

Sook will begin her doctorate next February, and is currently researching ideas for her final works. The thought of a thesis is daunting for someone who has only recently learned English, although Sook’s focus remains with her art. ‘The thesis is important, but not as important as the work. The feeling is the most important. When you stand in front of a work, you are feeling, and there is no need to explain. Inspiration is much more important than language.’
One-time highest points scorer in the Sydney first grade rugby league competition, Tony Armstrong had to make a decision about what to do after his football career was over. A sports fanatic who had won school firsts in football, cricket, athletics and swimming, he simply couldn't face life in a 'straight' job.

So Tony turned another of his sporting loves into a career and leapt into a new life, literally. He opened a hang-gliding business south of Sydney and now instructs the adventurous in the skills of hang-gliding and the increasingly popular paragliding.

In 1985 Tony's football career looked set to take off. He had played for Western Suburbs and Canterbury and then moved to Cronulla. But a ruptured ligament suddenly put paid to it all and to Tony it seemed like the end of the world. He was told he would never play first grade league again. That also meant he lost his job - the Sharks had no use for an injured fish in their midst.

With no formal qualifications life looked grim. 'I felt pretty low then. I was 28, I didn't have a full-time career and basically I had to go out and find my own source of income. But I hadn't been trained towards any particular career,' Tony says.

With no job and no prospects Tony took solace in his hobbies - surfing and hang-gliding. He decided early on that whatever he did, it had to be focused on sport. He also decided that lifestyle was more important than money. Riding the thermals above his home at Stanwell Park, he decided he wanted to be involved totally with hang-gliding and start with an innovative approach.

So he enrolled in the University's course in sports science. 'I knew how to hang-glide, I knew how to surf, but I wanted more formal qualifications that would give me a truly professional approach to teach my favourite sports,' he says. 'That course was fantastic. It gave me the skills I needed and the theoretical knowledge and now I can teach outdoor adventure sports - at least the ones that I am proficient in.'

Tony runs his own company, Active Air hang-glide, a two-day beginners' introductory course or the fully fledged week-long intensive course, much of it conducted in the tandem glider with the student gradually taking over control.

'That means that I can fly most of the time,' explains Tony. 'Teaching hang-gliding has meant that I spend a lot of time up there - a free spirit.'

Tony's success extends beyond his business. Last year he took out the Australian Freestyle Hang-gliding Championship on the north coast and he has travelled extensively overseas both hang-gliding and teaching. His reputation as an instructor is growing internationally and with paragliding taking off in Europe, the sky is the limit.

Tony firmly believes that individuals can create their own employment opportunities, particularly in the areas of leisure and tourism. Many people, he says, have skills which they see as purely recreational but which can be turned into an income-earning proposition.

Although his own business is growing, Tony says he doesn't make a lot of money. 'At 34, I'm starting to grow up. I make enough to survive and I make it doing something I love, soaring above the escarpment 1,500 feet up. I see it not just as a job, but rather as a business lifestyle.'

Based on an article by Rebecca Scott which appeared in the Sydney Morning Herald on 16 May 1992.
University Day celebrates the establishment of Wollongong University College in May 1961. Each year the University marks its anniversary by inviting a distinguished speaker to deliver the University Day Address and by acknowledging the achievements of its staff members.

This year well-known Australian Professor Fred Hollows gave an address entitled *An Australian and Wollongong contribution to equality of eye care between the rich and poor nations*. He spoke about the significance of the ocular lens factory which he has established in Wollongong under the guidance of Steven Miller, who is on leave from his position in the Department of Physics.

Before the address a number of staff were presented with awards.

**Vice-Chancellor’s Awards for Outstanding Service**

A new award scheme for general staff, introduced this year, is intended to encourage outstanding or exceptional contributions to the operation of the University. These awards are similar to the Vice-Chancellor’s Awards for Excellence in Teaching, and winners of both awards are announced on University Day.

Altogether twenty nominations (including three teams) were received from the campus community for the Outstanding Service Awards. Each of the winners or group of winners received a certificate and a cheque for $1,000 (or a contribution to the value of $1,000 towards attendance at courses or conferences of their choice). Six awards were made as follows:

**David Price**  
*Department of Geography*

A Professional Officer, David has played a major role in establishing and running the Thermoluminescence (TL) Dating Laboratory which is classed as Australia’s leading sedimentary dating laboratory. The success of this facility has brought international recognition to the Department and the University.

**Iain Murray, Bob Galvin, Gary Watkins and Vince Raschilla**  
*Cleaning Services*

These four gentlemen are Cleaning Crew Chiefs who, in the last year, have imple-
Award to Nursing Department for community work

Awarded the new Cleaning Agreement reached by negotiations between the University and the Federated Miscellaneous Workers Union. The Agreement focused on changes to work practices resulting in increases in productivity. They undertook the difficult and sensitive task of implementation across the campus with both enthusiasm and commitment.

Ellen Peascod
Student Administration

A part-time Administrative Assistant, Ellen has demonstrated initiative by recommending and implementing changes to procedures associated with the Summer Session enrolments. These resulted in more straightforward administrative arrangements for students and staff and produced savings of about $7,000 in postage, printing and temporary assistance.

Annette Meldrum
University Library

Annette, who is a General Library Assistant in Information Systems, has demonstrated outstanding initiative by developing a 'Loans Training Package' which ensures that a minimum level of training is available for all new and casual staff. The package provides a more professional approach to training and will serve as a model for the development of similar packages in other Library departments.

Rosemary Cooper
Faculty of Commerce

In the last twelve months, Rosemary, who is the Faculty's Professional Officer, has built up this new position which involves the provision of on-going financial and statistical information to the Dean and Department Heads. In particular she has displayed great initiative by developing and maintaining several computer-based systems so as to provide timely and accurate information to the Faculty.

Ross Walker
Personnel Services

Ross is the Personnel Officer for Academic Staff and is renowned for the consistently high level of service which he provides to his clients. He displays remarkable knowledge and understanding of regulations relating to many aspects of personnel management and is always willing to provide support and advice in a friendly and professional manner. In particular, he has worked with the Department of Immigration over the last year to resolve a number of increasingly complex issues in relation to the employment of staff.

Ethel Hayton Trophy awarded to Irene Stein

Ethel Hayton was one of the original group of citizens of the Illawarra who worked towards the establishment of the University of Wollongong. She demonstrated her continuing support in many ways until her death in 1988. She commissioned a local sculptor, Gino Sanguineti, to commemorate the 10th year of University autonomy. The trophy that he made symbolises the grand fig trees which once dominated the campus and around which the University grew.

Since 1986 this sculpture, known as the Ethel Hayton Trophy, has been awarded annually to the academic unit or member of the academic staff who, during the preceding year, is considered to have made a notable contribution to an activity which has enhanced community support for the University.

Senior representatives of the local media consider nominations for the award and the winner is presented with the trophy on University Day.

This year there were five nominations for the award: the staff of the Recreation and Sports Association; Owen Curtis, lecturer in the Department of Human Movement Science; Grahame Morris, Sub-Dean of the Faculty of Informatics; Peter Shepherd, Associate Professor in the School of Creative Arts; and Irene Stein, lecturer in the Department of Nursing.

Irene Stein was chosen as winner of the trophy in 1991 for her work in the Department of Nursing. She has developed a program of nursing training that not only enriches her students' education but also reaches out to the community in a practical and caring way.

She is the coordinator of the Department's Gerontology Program which involves students making personal contact with elderly citizens. The rapport thus established has very positive results both for the students and for the well-being of the elderly, who come to trust the students for guidance on a wide range of problems.

Irene has also pioneered a parallel program for placing students in nursing homes, and she administers the training program for Aboriginal students which aims to prepare them to return to their communities to practise as nurses.
University plans for the future

The University has recently released a planning document *Towards 2000* in which a range of achievements over the past five years is highlighted and key objectives and targets for the future are set.

Each faculty and unit has produced a long-term 'vision' and has listed its objectives covering all areas of activity. Each area has then set its own strategies and performance targets for achieving its various objectives.

*Towards 2000* defines the attributes that the University seeks to develop in its graduates.

As well as producing graduates who have extensive knowledge in a discipline area, the University aims to ensure that all its students graduate with particular technical and ethical standards. These include computer and statistical literacy, being orally articulate and confident and able to communicate fluently.

Wollongong graduates should also appreciate other cultures and customs, value truthfulness, accuracy, honesty and ethical standards in personal and professional life, and should have learned to accept responsibility as well as assert rights.

Each department or unit in the University has been asked to review and explore the best ways to develop further these desired attributes.

The University is aiming to be among the top ten Australian universities, and to be known for the excellence of its teaching, research and international programs, by the year 2000. *Towards 2000* is especially noteworthy for the quantitative goals that have been set which underpin the qualitative ones and provide benchmarks to assess real progress.

Further information on *Towards 2000* may be obtained from Canio Fierravanti in Planning and Marketing Branch, University Administration.

Malaysian student teachers visit Wollongong

Twenty students and four teachers from the University of Malaysia visited Wollongong in June as part of a program organised by the Faculty of Education.

Student teachers have been going overseas from Wollongong since the early seventies for practice teaching in schools, initially in Papua New Guinea and later in New Zealand, Fiji, Malaysia and China. This is the first time that a reciprocal visit has been arranged.

During their stay the Malaysian students taught their culture in local primary schools and went on trips to Canberra and Sydney to extend their knowledge of Australia. They were billeted with families in Wollongong.

The Principal of Cringila Public School, Mr Denis Ravell, said it had been a delight to have the Malaysians in the school. All the children had warmed to them and enthusiastically joined in the activities based around Malaysian dance and crafts.

The leader of the group, Fatimah Hashim, said she hoped this was the first in an ongoing arrangement to send Malaysian student teachers to Wollongong.

Wollongong ranked in top ten in Good Universities Guide

The latest issue of *The Good Universities Guide*, by Ashenden and Milligan, has again put Wollongong in its 'best buys' category:

The University of Wollongong is perhaps the best package in Australian higher education - a wide range of courses, moderate cut-off scores, a fine location and good teaching. Wollongong is close to the Pacific surf and to the mountains. Sydney is an hour away by train, but a world away in housing prices and traffic congestion. Wollongong is large enough to offer most courses but small enough to get to know. Its courses have traditional university names but are more employment-focused than is usual in established universities. Wollongong takes teaching and learning seriously. Ability to teach is a major criterion for staff appointment and promotion and is regularly assessed by the Centre for Staff Development through student evaluations. There is a mentor scheme which provides one-to-one personal and study support for enrolled students. Summer courses allow catch-up and remedial work for students with study problems. Basic computer literacy is required for graduation. Wollongong is one of the few institutions to have avoided amalgamation and the turmoil that goes with it.
Donald Horne speaks about republicanism...

Well-known writer and lecturer Professor Donald Horne visited the University on August 26th and gave a lively address entitled Freedom and independence for the golden lands of Australia: The coming Australian republic.

Professor Horne described republicanism as the need to redefine our inheritance as Australian rather than British, adding that Australia has no other logical choice than to break its ties with Britain and stand on its own.

'We must think of ourselves as an independent nation and create in our minds a new Australia,' he said. In particular he urged the audience to look at what it means to be Australian and a citizen. 'How we see ourselves as Australians will determine how we act as Australians.'

He said that it would be nice to celebrate Australia's birthday in 2001 (100 years after federation) by becoming a republic and described this as one of the 'more practical acts we could engage in.'

He expressed concern at Queen Elizabeth being the constitutional head of Australia since she is also Queen of Great Britain and cannot, he believes, represent both countries equally.

Professor Horne explained that Australia has what he calls a 'colonial economic cultural cringe' which has prevented us from developing our economic base. In the early days we were not expected to be competitive internationally and this attitude is difficult to alter. 'Our business culture is weak,' he said.

He firmly believes that we are alone in the world and must be prepared to search for what makes us special. 'We should be looking for Australian achievements,' he said. 'For example, we have changed from one of the world's most bigoted nations to one of its most tolerant.' He added that being able to say we are a multicultural country is a great achievement in itself.

... and launches a book

During his visit Professor Horne launched two books: Australia's Italians and the Italian translation Italo-Australians.

The books were edited by Stephen Castles, Centre for Multicultural Studies; Gaetano Rando, Department of Modern Languages; Ellie Vasta, Department of Sociology; and Caroline Alcorso, freelance researcher.

Italians were the largest non-British group to migrate to Australia during the post-war migration boom. Today there are more than a quarter of a million Italian-born people in the country. Australia's Italians examines the emergence of Italian culture and community, and the impact by Italians on Australia.

It was last century that Italians started arriving in Australia. Some worked as itinerant labourers while others established farms, fishing industries and businesses. Later settlers worked in factories in the cities. Their lives were hard, but for many frugality and tenacity led to success.

Assimilationist policies tried to turn the Italians into 'New Australians', but they were determined to keep their culture and language. They established clubs and associations, churches and welfare associations. Italian neighbourhoods like Carlton in Melbourne and Leichhardt in Sydney gave Australian cities a new cosmopolitan flavour.

Drawing together contributions from sociologists, historians, linguists and community figures, the editors address a vital theme.

Australia developed as a society modelled on British traditions and culture, and has had great difficulty coming to terms with its place in a post-colonial world. They argue that the Italians and other Europeans have changed Australia, making it more open and cosmopolitan, and thus better able to deal with a post-European future.
EMINENT SCIENTIST LEADS
ILLAWARRA CANCER RESEARCH

Three times award-winning research scientist, Dr Mark Baker, has recently joined the staff of the Biology Department where his research will contribute to the prestige already associated with the medical research effort in the region.

Mark Baker has been awarded two International Young Investigative awards (in 1988 and 1990) for his research in free-radical cartilage injury from arthritis.

In 1991 he was awarded the Australian National University Howard Florey Award - the name is derived from an Australian Nobel prize-winning penicillin researcher - for outstanding scientific achievement by a young Australian scientist.

Dr Baker's research deals primarily with the mechanism of malignant cancer spread through the body (metastasis) and the prevention of this spread into normal healthy tissue.

The way malignant cancer cells cross normal cell tissue barriers and spread to distant organs is to detach initially from a primary tumour mass. They then dissolve the 'matrix' (composed of collagens, proteins and fibres) which surrounds and supports all cells and tissues of the body. Once the matrix is degraded, the cancer cells can then invade much deeper tissue and reach the blood and lymphatic drainage systems where they can travel around the body and create a secondary tumour mass.

It is well known that the formation of metastasis in all forms of cancer is associated with a poor prognosis and survival.

Dr Baker and other international researchers believe a specific protein, urokinase plasminogen activator (uPA), which is bound to the surface of malignant cancer cells, is a principle component responsible for cancer spread. This protease catalyses a series of reactions which leads to the direct destruction of the important matrix components.

Although it is believed that other molecules are involved in the cancer cell degradation of cell basement membranes, Dr Baker says that an initiator with broad spectrum protease activity, like uPA, is a strong candidate to trigger the complex process of cancer invasion.

Normally uPA is modified by an inhibitor, making it innocuous. The gene which manufactures this inhibitor, plasminogen activator inhibitor-2 (PAI-2, pronounced pie-2) was first isolated and localised by Dr Baker on the eighteenth human chromosome.

In 70% of tumour cells of malignant cancers this PAI-2 gene is actually missing. While five or six other genes are also considered to be involved, Dr Baker believes this PAI-2 gene is an important metastasis suppressor gene. He says, 'the loss of expression of the PAI-2 gene means uPA is uncontrolled and can act in an unrestrained manner on the cancer cell surface. It is something akin to the first snowflake which eventually leads to a devastating avalanche'.

In collaboration with a Sydney-based biotechnology company, Biotech Australia, Dr Baker and his associates have used genetic recombinant techniques to manufacture the PAI-2, using the human PAI-2 gene and E Coli. Trial tests conducted on artificial tissues and model cell systems have proved PAI-2 overwhelmingly successful in stopping the spread of cancer.

Dr Baker's research was previously funded by the ANU, charities and local benefactors in the Canberra area. His recruitment to the Department of Biology at the University of Wollongong strengthens the University's emerging role in sophisticated biotechnology-related teaching and associated research.

Dr Baker comments that cancer researchers have reached an exciting stage in this very difficult area. 'In the next 25-50 years we will see great leaps forward in the way we detect, diagnose and treat the common malignant tumours including breast, bladder and colonic cancer,' he says. 'One way we can continue to pursue this sort of novel research is if we continue to attract adequate funding.'

At present his research is funded by the NHMRC, the Cancer Council and international biotechnology companies, although he would prefer to have regional support. Dr Baker believes that with the help of funding from the Illawarra, his research could help promote the region as a centre noted for its cancer research.
Contact with the Commonwealth of Independent States

RUSSIAN DELEGATIONS VISIT UNIVERSITY OF WOLLONGONG

The University of Wollongong has hosted visits from three delegations of top level executives from the Commonwealth of Independent States during the last twelve months.

In co-operation with Moswest and the Academy of National Economy in Moscow, Dr Brian Gillett and Mr Peter Rose of the University's Office of Development and Community Affairs have organised a series of educational, business and cultural programs with the aim of providing the participants with an opportunity to explore a range of issues of particular interest to them as they move towards establishing a competitive, private enterprise economy.

The first delegation in December last year was a fact-finding mission whose intention was to gauge the potential value of such visits to Australia. Following their favourable findings, particularly in relation to the University of Wollongong, a group was nominated by the Russian Ministry of Geology to undertake a structured program in April this year.

The 20 participants represented a range of business interests including mining, banking, foreign trade, mineral search and research and steel processing. During their three-week stay, delegation members met with academics, business leaders and government officials to address topics of specific interest. Receptions were held by the University, the City of Wollongong and the New South Wales State Government. There was also an official dinner at the Northbeach Parkroyal and a visit to Canberra to meet with Commonwealth Government officials.

Delegation members were able to observe a range of work situations at BHP Steel (Port Kembla), MECO Manufacturing, David Brown Gear Industries Ltd, the Stock Exchange, the Commonwealth Bank, AOTC and Open Systems. The contacts with business organisations provided opportunities to discuss the operations of private and public enterprise in the Australian economic system.

The next delegation in June consisted largely of representatives from Nizhnevartovskneftegaz, a huge association concerned mainly with the extraction of oil and gas in Siberia. A similar program was developed but with greater emphasis on the technical aspects of the petroleum industry. Part of the program was conducted at the University of NSW Centre for Petroleum Engineering with a lunch organised with the Society of Petroleum Engineers. The party was taken interstate in order to visit the ESSO works (including the off-shore platforms) in Melbourne and the Moomba Field (oil and gas) in South Australia through the cooperation and generosity of Santos Ltd. This program offers an example of enterprise in the University and the manner in which University personnel are prepared to support such enterprise. Professor Tibor Rozgonyi, Dean of the Faculty of Engineering, has been the linchpin in ensuring a challenging, relevant engineering program, enthusiastically supported by Professor Raghu Singh and the Department of Mining. Professor Michael Hough has masterminded the introduction to western business practices and management with the help of the Department of Management, while Ms Sue Rejske has provided the organisational and administrative genius to ensure an efficient program for a demanding clientele. The language barrier was hurdled with the help of Professor Nicholas Standish, Dr Victor Portugal, Mrs Anna Rousch, Ms Nadia Crittenden and Ms Jackie Zelinsky - a real team effort.

In looking to the future, it is obvious that there is a range of opportunities for the University and Australian business interests to participate in the changing environment in the Commonwealth of Independent States. The magnitude of the change process is difficult to grasp and the barriers to our participation are only too obvious - the tyranny of distance, the inadequate telecommunication system in the CIS and the paucity of funds.

The extent of the University's involvement in this and similar programs in the CIS is a matter for conjecture, but there is no mistaking the enthusiasm and the intent for such an involvement.
ITC appoints new chairman

Mr George Maltby has been appointed Chairman of the Illawarra Technology Corporation (ITC) Limited.

Former Managing Director of OTC, Mr Maltby is also Chairman of the Australian Telecommunications Users’ Group and a member of the new Telecommunications Industry Development Authority.

ITC Limited, the research and development company of the University of Wollongong, has gained major contracts with Australian and international communications carriers and suppliers through its Centre for Information Technology Research.

‘Universities have a great contribution to make to Australia’s industrial and commercial development,’ Mr Maltby said. ‘ITC Limited is fully committed to that challenge. We provide a commercial focus to help industry gain cost-effective access to the University’s research and development expertise.

We are involved not just in information technology research and training, but in a number of other areas as well, such as innovative work in environmental management, the commercial application of microwave technology, and on-site training for managers and shopfloor operatives in manufacturing industry,’ he said.

Mr Maltby was Managing Director of OTC from early 1985 until late 1988. Until his retirement he was Australia’s top international telecommunications management executive. He has had extensive experience negotiating agreements and policies in the telecommunications industry and was closely involved in all of OTC’s major international projects.

University of Wollongong Foundation Limited

Now a leading Australian institution in educational and technological innovation, the University of Wollongong’s achievements have earned for it an international reputation for energy, enterprise and excellence.

The Foundation has been created because the Council of the University has identified a need for a permanent fundraising body which will employ a range of methods and initiatives to acquire active community support for new programs at the University.

The Foundation is registered as a company and has already developed considerable support from business corporations, private individuals and government areas. The goal is to raise $2,500,000 over a five-year period and to channel this support of gifts in kind or cash to the development of several University projects.

A major project is the development of a Multimedia and Open Learning Laboratory (MOLAB). This laboratory will develop and produce interactive learning materials for university and community use, employing combinations of print, video, electronic mail, satellite, CD ROM and live interactive broadcast, plus computer and audio-visual software.

A recent grant from the federal government of $2 million will enable the Pentagon Building on campus to be redeveloped to house Stage I of MOLAB. This facility will be operational in the first semester of 1993.

In addition to supporting MOLAB, the Foundation is also a vehicle through which support can be given to individual faculties who have their own specific needs.

The Foundation has now become part of the new Office of Development and Community Affairs (located on Level 3 of the recent extension to the Union building), which brings together the Foundation, Cooperative Education Programs, Alumni Office and Friends of the University.

Visitors from Kawasaki demonstrate Japanese culture

Lord Mayor of Wollongong, Alderman David Campbell, attends a tea ceremony as part of a Japanese cultural evening organised by Wollongong City Council and the Takatsu Ward Cultural Association from Kawasaki - Wollongong’s sister city in Japan. The cultural evening was held on campus in the Hope Theatre.

University of Wollongong Foundation Limited

Now a leading Australian institution in educational and technological innovation, the University of Wollongong’s achievements have earned for it an international reputation for energy, enterprise and excellence.

The Foundation has been created because the Council of the University has identified a need for a permanent fundraising body which will employ a range of methods and initiatives to acquire active community support for new programs at the University.

The Foundation is registered as a company and has already developed considerable support from business corporations, private individuals and government areas. The goal is to raise $2,500,000 over a five-year period and to channel this support of gifts in kind or cash to the development of several University projects.

A major project is the development of a Multimedia and Open Learning Laboratory (MOLAB). This laboratory will develop and produce interactive learning materials for university and community use, employing combinations of print, video, electronic mail, satellite, CD ROM and live interactive broadcast, plus computer and audio-visual software.

A recent grant from the federal government of $2 million will enable the Pentagon Building on campus to be redeveloped to house Stage I of MOLAB. This facility will be operational in the first semester of 1993.

In addition to supporting MOLAB, the Foundation is also a vehicle through which support can be given to individual faculties who have their own specific needs.

The Foundation has now become part of the new Office of Development and Community Affairs (located on Level 3 of the recent extension to the Union building), which brings together the Foundation, Cooperative Education Programs, Alumni Office and Friends of the University.
The Co-op Bookshop

WITH MORE THAN 30 YEARS EXPERIENCE STOCKS

ALL UNIVERSITY TEXTBOOKS

AT

DISCOUNT PRICES!

BACKED BY 30 BRANCH NETWORK

100 CROWN STREET MALL
WOLLONGONG
PHONE: 288 672
FACSIMILE: 292 325

MEMBERSHIP COSTS
ONLY $15... AND
LASTS FOR A LIFETIME
Over 1,500 students graduated during the five ceremonies held in the first week of May.

Occasional addresses were delivered by Mr John Aqulina MP, Shadow Minister for Education and Youth Affairs; Senator Michael Baume, NSW Shadow Minister for The Arts, Heritage, Sport and Youth Affairs; Dr June Verrier, Assistant Secretary, Equity and Community Relations Branch, Office of Multicultural Affairs in the Department of the Prime Minister and Cabinet; Mr Brian Loton, Chairman of BHP, who also received an honorary doctorate; and Dr David Cook, Executive Director of the Australian Nuclear Science and Technology Organisation.

**Honorary Doctorates**

Two outstanding citizens were awarded doctorates *honoris causa*. A Doctor of Letters was awarded to Professor John Passmore and a Doctor of Science to Mr Brian Loton.

**John Passmore**

John Passmore is a prominent Australian philosopher and scholar who has worked with the great names in philosophy at some of the world’s leading universities and whose own works remain touchstones for both philosophers and educators. During his career he has been acclaimed for his creative thinking, his ability to translate difficult concepts into clear and powerful prose and his devotion to teaching. He is now an Emeritus Professor of the Australian National University where he continues to teach in the History of Ideas Department.

In 1988 Professor Passmore donated 1,500 books - the substance of his professional library - to the Michael Birt Library at this University. Most of this valuable collection is out of print, with some books dating back to the seventeenth and eighteenth centuries.

Although he had walked the cloisters of some of the world’s oldest universities, John Passmore chose to give his treasured books so that they could be of benefit to the students and scholars in a comparatively young university. By this award the University of Wollongong recognises the brilliance of Professor Passmore’s contribution to his field and his continuing devotion to passing on to others some of his immense knowledge.

**Brian Loton**

Brian Loton has had a long and distinguished career with BHP. His senior posts included General Manager of the Newcastle Steelworks, Executive General Manager of BHP’s Steel Division and, from the early eighties until his retirement in 1989, he was Managing Director and Chief Executive Officer of BHP, Australia’s largest company. He continued his involvement as Deputy Chairman and earlier this year became Chairman of BHP. During the 1980s, a period of some turmoil in industry, Mr Loton’s greatest challenge was to preserve the company and yet to respect the dignity of steelworkers and to show them a way to a more secure future.

In 1988 he was named Businessman of the Year by the *Business Review Weekly*, and the following year he was made a Companion of the Order of Australia.

By awarding this honorary doctorate to Brian Loton, the University of Wollongong recognises his technical ability, his business acumen and his human skills.

**Fellows of the University**

This award has been established to allow the University to recognise publicly the contribution of persons to the community.
Cornelius Martin

Cornelius Martin has been associated with BHP and with mining operations for over 40 years. Throughout his long career he has demonstrated a dedication to the company, a feel for successful ideas and a concern for the safety of miners and the improvement of mine conditions.

Con Martin came to the Illawarra in 1960 and two years later became General Superintendent of BHP and AIS Collieries. He held that position until his retirement in 1979.

He was known throughout his career for his technical competence and was extensively involved in the introduction of shortwall and longwall mining. He also took an interest in the professional and educational development of mining engineers and managers. In the mid seventies Mr. Martin worked towards the introduction of a mining engineering course at this University and was active over the years in a number of professional bodies.

In 1987 Con Martin was awarded membership of the Order of Australia for services to the mining industry and to education. The University of Wollongong recognises that he is an important figure in the development of an industry which has been fundamental to the economic well-being of the Illawarra region, and is honoured to welcome him into its community.

Edward Tobin

Edward Tobin grew up in Wollongong and his talent for sports, especially surfing, found the perfect outlet in the Illawarra with its fine beaches and sporting tradition. He represented the Illawarra at junior and senior levels in soccer, cricket, surfing, rugby union and squash. He is a life member and Past President of both the Illawarra Surf and Illawarra Leagues Clubs, and a life member of the Beaton Park Leisure Centre.

It was natural that Mr. Tobin’s contact with the University should come through a mutual interest in the nurturing of exceptional sporting ability. In late 1985 the University initiated the establishment of the Illawarra Institute of Sport. The Institute (later to be known as the Academy) represented one aspect of a unique health program introduced by the University through its Human Movement Science courses.

Out of this has grown the Faculty of Health and Behavioural Sciences, which is now a leading Australian centre for preventative health care and the practical promotion of improved health and performance in both the elite sportsperson and the average citizen.

Ted Tobin played an influential role in the development of the Academy of Sport, first as part-time and then full-time Administrative Director and then, in 1988, as the elected Chairman of the Board.

He also spent much time working towards the improvement of safety standards in industry, and served as an alderman of Wollongong City Council between 1971 and 1983. In 1977 he received the Queen’s Jubilee Medal for services to local government.

Edward Tobin played an influential role in the development of the Academy of Sport, first as part-time and then full-time Administrative Director and then, in 1988, as the elected Chairman of the Board.

He also spent much time working towards the improvement of safety standards in industry, and served as an alderman of Wollongong City Council between 1971 and 1983. In 1977 he received the Queen's Jubilee Medal for services to local government.

If there is an outstanding theme in Ted Tobin’s career, it is his abiding care for the young and the proper development of their potential. It is appropriate that the University, which is entrusted with the nurturing of young minds and talents, should give due recognition to him.
Growth and development of the campus

The University of Wollongong

Aerial view of the campus in 1973...
...And how it has changed nearly 20 years on
Is God ‘green’? How do religion and concern for the environment fit together? These questions were discussed at a recent seminar held by the Zadok Institute and the Illawarra School of Biblical Studies.

The debate over the environment is not just a matter of assessing the merits of differing scientific perspectives. In fact it never has been - the way in which people see and manage their surroundings is strongly influenced by their religious or ethical opinions.

It has also been common since the late nineteenth century to believe that the Christian world view does not fit easily with scientific progress. Certainly to many people, the Christian view is out-of-date and irrelevant to the pressing problems of today's environmental crisis.

The very well-known environmental moralist and Friend of the Earth, Jonathon Porritt, argued in Australian Natural History in 1991 that there was a need for major changes in our attitude to the environment and for decisive action on the part of governments to counteract the effects of 'greenhouse' climatic change. 'No amount of new technology, new internationalism or people opting for quality of life rather than crude materialism are going to bring about the kind of transformation that is necessary. A radical philosophical shift is needed,' he said.

The radical philosophical shift proposed by Jonathon Porritt is a religious view. He supports the concept of Gaia which he describes as: 'a compellingly simple idea that the Earth ... is a biological super-organism capable of regulating its conditions to optimise the chance of survival.'

Gaia, a name from Greek mythology for the earth mother goddess, is a concept proposed by James Lovelock for the idea that the earth is not an inanimate mass of rock, air and water on which living things just happen to exist. It is itself a living thing. It can regulate its atmosphere, and thus its temperature, in a way analogous to the way in which we regulate our body temperature.

We know that life on earth has a profound effect on the atmosphere. When plants evolved and photosynthesis began, the atmosphere changed from a reducing to an oxidising environment. We plant trees to absorb the carbon dioxide released by the burning of fossil fuel. But it is a long step from this knowledge to the Gaia concept.

A recent paper in Geological Magazine by a well-known Swiss geologist, Kenneth Hsu, talks of Gaia as a person. 'The “greenhouse” provided by atmospheric carbon dioxide is Gaia's clothing. She puts on more clothes when it gets colder and she takes some off when it is hot.'

A close reading of Hsu's paper reveals some amazing statements which make this concept seem quite fantastic. He proposes, for example, that dinosaurs died out because the earth was blanketed by dust from a meteorite collision. This caused the temperature on earth to plummet to -40°C, which is colder than in the centre of the Greenland ice sheet or Antarctica. If this had happened, how could any life at all have survived? In this case the 'radical philosophical shift' in a view of the world has produced scientific nonsense.

Gaia may be a comforting thought, but it is unconvincing either as a religion or as a scientific theory. It reflects a yearning for religious explanation rather than a scientific assessment of observable relationships. Perhaps we have been so bombarded by gloomy predictions about impending crises - greenhouse warming, nuclear winter, the ozone hole - that we grasp at any straw of hope for the future.

In any case, is impending environmental doom so certain? Scientific evidence of major impacts from global warming is not as overwhelming as newspaper articles would have us think. Colleagues of mine have found that the evidence for worldwide sea level change is unconvincing - yet sea level rise is one of the hallmarks of greenhouse.

Similarly, a 1992 issue of the Bulletin of Atomic Scientists carried two articles with conflicting opinions on the greenhouse effect. Whilst one argued that we should be taking immediate action against it, the other argued there was so little evidence for it that we should spend our resources on problems we know to exist.

Paul Davies, a physicist whose books God and the New Physics and The Mind of God have recently been reviewed in newspapers, states that in his opinion, science offers a surer path to God than religion. So what is his view of the universe? He says, 'Our universe may be only a disconnected fragment of space-time ... With this definition of “universe” the explanation for our cosmos does not lie within itself - it lies beyond. It does not involve God, only space-time and some rather exotic physical mechanism.'

This is meagre fare for the soul. In my opinion, the perspectives of science and Christianity are compatible, and even complementary.

The theologian, Francis Schaeffer, argued that science as we know it arose because its early practitioners, such as Isaac Newton, recognised the world as the creation of a God of order. He and others have argued that the great exploitation of nature came when we stopped seeing ourselves as God's stewards and, from the time of the Enlightenment, began to see ourselves as autonomous and accountable to no higher authority.

The biblical view is that God provides for us and for other creatures, that Christ sustains the universe and that we are responsible for the way in which we make use of all God gives. Perhaps it is not a new religion we need, but a return to a more humble and responsible stewardship of the resources God has given us.
OBITUARY

Rita Rando

Rita Rando joined the Library in April 1980. She was appointed to catalogue the foreign language material being acquired by the then Department of European Languages. But her contribution far exceeded that suggested by her job description.

Rita brought to her work not only the skills of the bibliographer, but a desire to improve and extend the collections and the services offered by the Library. Through her publishing and cultural contacts Rita achieved many valuable acquisitions, including the Library's first videodisc De Italia donated by the Agnelli Foundation in 1989.

In 1984 Rita had the distinction of being the first member of the University's general staff to be awarded development leave to further her professional knowledge.

In the early eighties Rita's cataloguing role was extended to include responsibility for the Library's small but growing collection of music. Her great love of music was evident in the enthusiasm she brought to this task.

The European languages and music collections will serve as a permanent memorial to Rita's work for generations to come.

Always willing to listen to others, she gave freely of her time and her support. Rita's concern for people was deep and genuine. Her positive and optimistic approach, even during her illness, was an inspiration.

Rita died on April 14th after a long battle with cancer. She was 46. She will be greatly missed.

National Music Camp Association seeks its alumni

The National Music Camp Association (NMCA) has been one of the most distinguished initiatives for youth in the arts in Australia for over 40 years. Many young people have been involved with the organisation either as participants in Music Camps, the Australian Youth Orchestra or more recently the Camerata of the Australian Youth Orchestra.

NMCA has not remained static over the years and recently voted to change its name to Youth Music Australia (YMA), a more memorable and appropriate umbrella title to cover its diversified and emerging needs.

YMA is actively reaching out to contact its alumni and is keen to encourage, by way of membership, active participation in the organisation. Membership is open to anyone over the age of 23 years.

For further information, contact Gail Hick at the YMA Office, PO Box 160, Rozelle NSW 2039; telephone (02) 555 7400 or toll free 008 22 2319.
Above the Rest
The University of Wollongong
UNION BOOKSHOP
The Special Order Experts
* Mail Order * No Joining Fee
15% Discount
(13% credit cards) for
* Staff & Students * Friends of the University * Alumni * Schools
We also stock: Computers * Software * Calculators
PH: (042) 266 940 FAX: (042) 266 865

The University of Wollongong Union
Conference and Function Centre

* Conferences
* Dinners
* Parties
* Seminars
* Wedding Receptions
* From 10-450 Guests

* Under-cover Parking
* Licensed Bar
* Full Catering
* Audiovisual Aids

Contact the Functions Co-ordinator
Elena Di Stefano
Tel. (042) 297833 Fax (042) 264250