SAVING $21m AND TEN YEARS' WORK

IN ORDER to work on a collaborative project with Dr David Jupp of the CSIRO Division of Water and Land Resources, Barry Harper, Lecturer in the Faculty of Education, is taking study leave for the first five months of this year. Barry, David and Dr Philip Simmonds of the Physics Department, were successful in an application for a 1985/86 University of Wollongong/CSIRO collaborative research grant which will be used to develop multi-component ‘fisheye’ photography techniques for light climate measurements in plant stands.

Hemispherical ‘fisheye’ photography has been used for some time for this type of work. The technique consists of taking a hemispherical photograph from inside of a plant canopy and by considering the camera lens function and sky light distribution, the gaps in the canopy as well as the light reaching the plant stand floor can be determined from the photograph. This type of measurement has tended to be labour intensive because of the need for observer interpretation of trunks and stems in the photographs.

A new technique, which relies on multi-component photographs using infra-red type films and video digitising of the resulting images, will be assessed during this collaborative work. If appropriate it will then be used to determine the light climate in a range of plant stands with particular interest centering on local rainforests.

Dr Jupp was responsible for development of the ‘BRIAN’ (Barrier Reef Image Analysis) mini-computer based image processing system. He was recently commended by the Federal Minister for Science, Mr Barry Jones, for this work which—it is estimated—will save over $21 million and ten years of effort in mapping the Great Barrier Reef.

Wollongong expertise helps two Rs

AN in-service course to provide teachers with the latest knowledge about literacy and how best to teach it to children is to be formally evaluated this year by The University of Wollongong’s Centre for Literacy, Language and Cognition.

The course was developed by the Centre and implemented since its inception in 1983. Now four of its members have been awarded a NSW Department of Education grant of almost $200,000 to monitor its impact in schools. Heading the team is Dr Brian Cambourne, a recognised authority on literacy improvement.

Wollongong’s initiative in establishing the course was part of the Federal government’s BLIPS program (Basic Learning in Primary Schools) which aims to achieve higher success rates in early literacy through better informed teachers. Our delight at the award for its evaluation will be shared by all those in the wider community who appreciate the importance of reading and writing skills.
Computer-aided drafting
a first for Wollongong University

DURING the recent Summer Session, the Department of Civil and Mining Engineering in The University of Wollongong offered a credit course based upon computer-aided drafting and drawing—CADD for short. CADD is not to be confused with CAD/CAM, which is generally interpreted as computer-aided design and computer-aided manufacture. The Department of Civil and Mining Engineering has offered courses in computer-aided design—CAD—for many years, all based on the Univac mainframe and including the two most used programs in the world—STRUDL and NASTRAN.

The course given to students in the Faculty during the Summer Session had two main aims: first to introduce them to commercially available software on the PC—Autocad, Cadmaster and so on—and secondly to enable them to gain experience in preparation of their own personalised programs directly in BASIC.

Reasoning for this latter work included the fact that commercially available software is generally all-encompassing and does much more than the average user requires. The programs prepared for independent use include only those facets required by the user, and the result is that they run faster, and the menus displayed are more concise (and often more descriptive).

As a result of this successful ‘first offering’ of computer-aided drafting, the Department of Civil and Mining Engineering is now proceeding with plans to offer such a course to local industry during Session 2. The lecturer responsible is Dr Y. W. Wong.

The offering of such Summer Session courses as outlined requires the availability of PCs with a minimum of 384K and preferably should be further enhanced. The Department of Civil and Mining Engineering has planned such development over a number of years and now has a small dedicated PC laboratory for drafting work.

Another ‘first’ associated with this Summer Session course on CADD involved the final examination. For the final and supervised examination (apart from other projects submitted) students were handed a printed exam paper, and a floppy disk. Students then proceeded to complete their work and, after three hours at their PCs, handed in their worked script—a floppy disk—containing their work. Marking was subsequently carried out on an enhanced PC by the lecturer concerned.

Lecturers in the course were Ian Piper, Senior Consultant, Computer Centre, Dr Y. W. Wong, Professor R. W. Upfold, with tutoring by Ian Laird, Technical Officer.

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Spinifex goes on making waves

SPINIFEX, brainchild of the University of Wollongong, is poised on the short list for the Prince Phillip Award. Indeed, the result might well be known by the time these words are on the printed page.

This news comes on top of the announcement that Spinifex has finalised distribution arrangements for its computer education equipment with the leading US distributor, Soft.Kat Inc., and will ship Australian-developed programs to the value of $250,000 to the United States during coming weeks.

The contract is believed to be among the first ever signed for mass US distribution of foreign classroom programs for microcomputers, or coursework. According to Spinifex’s management and market development consultant, Mike Buchanan, major US software catalogues for schools use are completely dominated by the major US software and education publishing houses.

Difficulties in arranging US distribution for the six Spinifex mathematics and numeracy programs were compounded because the mathematics segment is the most fiercely contested in the American schools software market.

First contact was made with Soft.Kat by Professor Peter Burton in April 1985 and intermittent discussions and evaluations continued for four months before draft contracts were exchanged. Long-distance contract negotiations continued on a weekly basis for another three months and were concluded with five days of discussions in California.

The initial contract gives Soft.Kat exclusive rights to Spinifex products in the United States for one year, during which the programs will be extensively advertised in education media and promoted through education catalogues with total distribution exceeding 500,000 copies. During the period, Spinifex will sell the arrangement to introduce other Australian software and peripherals to the US market.

To test market reaction to local software, Spinifex conducted a two-week telemarketing activity in the Illawarra region last October. Of 51 schools contacted with a free trial offer, 18 purchased bundles of software priced at up to $260. Many of the remainder had no funds available at the time of the offer but indicated a willingness to purchase in 1986.

Spinifex was founded in 1983 by Ian Greig, a school teacher with a keen interest in computer applications in education, and Professor Peter Burton, a prominent academic at The University of Wollongong.

Six programs were developed by a project team led by Peter Burton, supported by advisers such as Professor Ron King, head of the Faculty of Education at The University of Wollongong. Funding support was given from a leading Australian business development finance house.
Towards a better wheelchair

IT was during the early seventies that Adrian Boyer—an electrical contractor from Dubbo—was watching a feature on television, addressing the problem of managing a person who is forced to spend his or her life in a wheelchair. The program caused him to think that there must be some way to help. And so began the project in which the Department of Electrical and Computer Engineering in The University of Wollongong became involved. The program is known simply as 'The Wheelchair'.

The concept produced by Adrian was that of a chair which would make the tasks of bed and car transfers, bathing, toileting and pressure-sore management simple enough for the occupant of the chair and one other person to manage on their own.

To provide these functions the back of the chair can be rotated, inclined at virtually any angle to its base. The base can be rotated, and the height and angle of the base can be changed by means of an electric motor. The chair may be easily manoeuvred in confined spaces and over rough ground.

In February 1980 Professor Brian Smith was asked to help in the selection of motors to propel the chair, and to advise on how to improve the drive electronics which displayed a rather unwelcome tendency to destroy the drive electronics. It was because of this problem that I was asked to become involved.

Meanwhile, the Commonwealth Aircraft Corporation had been invited to produce a few prototypes in time for the Year of the Disabled. The Corporation had done quite a lot of work on the problem but were unable to meet the deadline. Consultants were thus brought in.

Our suggestion was that the drive electronics should be redesigned. So we were given that task as well as running tests on various motors to find those which would be best for the job.

By Anzac Day we had completed our task and helped to install the electronics in the prototype, which was then demonstrated to the media, and to a selected audience, in Melbourne in May 1980.

That prototype proved that while the original design concept was achievable in practice severe problems remained in obtaining enough mechanical strength during the performance of some functions. Despite this, however, the prototype was awarded a prize at a world symposium in Canada and did well in the television program entitled 'What Will They Think of Next'.

Comments expressed at that time were to the effect that the basic ideas incorporated in the design were excellent and that control and steering were the best so far experienced.

In ventures such as this problems of funding are frequently met with. In this case problems were encountered in locating funds with which to redesign the mechanical components. It has been a source of considerable encouragement that a group of dedicated people have continued the development work despite the funding problems.

At present, we are helping to produce the electronics for the latest pre-production prototypes. They will have a more modular system which will enable modifications to be introduced as well as helping to make repairs easier, should production begin.

The workshop staff in the department, particularly Ron Parker and Peter Costigan, have spent many hours on this project, and also provide a service to the local community by providing maintenance for a variety of electric wheelchairs.

(Dr) Geoff Trott
Department of Electrical and Computer Engineering
University of Wollongong

Meanwhile, we have been investigating the system that was perforce designed at such short notice, and taking us into such areas as VLSI (Very Large Scale Integrated) design, hybrid computer simulation, power electronics and digital computer control.

The orthodox electric wheelchair has two wheels fixed in directions which are driven by means of two motors, through gear boxes, and two freewheeling castors. To move over rough terrain it is best to have the castors at the rear. In this configuration, however, the chair tends to be unstable. When a turn is initiated, the chair tries to turn all the way, and to move backwards, rather after the fashion of a wayward shopping trolley.

It would also be an improvement if the chair could stop on, or across, an incline without trying to move. In order to satisfy these desiderata with smooth action, adequate speed and power, combined with minimal current drain and no chance of failure of devices used, reasonably complicated circuitry is needed. Our first circuit, however, met these demands.

Since then we have designed and built two VLSI chips to perform part of the circuit (December 1983 and December 1984), which have also been used in robotic applications. We have also been working on an improved design of electronic changeover switch for the motors. One postgraduate student has been investigating using microprocessors instead of analogue electronics. The control problem is difficult to investigate as it is non-linear and depends on the motion of the chair, so a hybrid computer simulation of the system is being developed for further studies.

At present, we are helping to produce the electronics for the latest pre-production prototypes. They will have a more modular system which will enable modifications to be introduced as well as helping to make repairs easier, should production begin.

The workshop staff in the department, particularly Ron Parker and Peter Costigan, have spent many hours on this project, and also provide a service to the local community by providing maintenance for a variety of electric wheelchairs.
Centre for Transport Policy Analysis at Wollongong

THE Centre for Transport Policy Analysis, established at The University of Wollongong, on January 2, is the newest focus of research on the campus. It comprises a group of highly qualified researchers and advisers from this and other campuses around Australia and eminent transport researchers from around the world. An advisory board comprises senior executives representing national shipping, shipper, union and maritime industry associations, bulk minerals, and primary commodity producer and exporter groups and government agencies.

Why the Centre?

Transport and transport-related costs often represent a large proportion of the delivered price of commodities. These costs are often higher than they ought to be, not only because of inefficient transport operations but also because of serious irrationalities in transport policies, policy-making and implementation.

The Centre will focus on aspects of efficiency of transport operations and the nature of transport policies and policy-making which influence the effective and equitable operation of transport services.

Aims of the Centre

The Centre has been established therefore as

• A focus for rigorous, analytical and non-partisan research into policy-oriented research and training and for contractual research which will attempt to bridge the gap between theoretical research and real-world operational and policy problems.
• Though the Centre will be concerned with regional transport issues and impacts it will be national and international in outlook. It will regard questions of transport efficiency and optimality as high priority issues and problems which relate to Australia's transport relationships with its ASEAN, Asian and Pacific Rim neighbours will come under scrutiny.
• The Centre will maintain an interdisciplinary framework as well as close co-operation with researchers in other Australian and overseas universities and agencies. It will seek to develop and maintain the highest professional standards.
• The Centre will focus on a number of high-priority research areas for which there is considerable expertise among its researchers. It will also, so far as possible, attempt to integrate programs of postgraduate and contractual research.

Centre structure and priority research areas

The Centre will focus on those research areas in which it has special expertise and experience. As far as possible it will attempt to integrate its professional and postgraduate research programs with its contractual research. This will enable the Centre to concentrate data and information resources as well as to increase its expertise.

Uniadvice will handle the consulting arrangements for the Centre and will act in a management capacity.

Present status

Currently the Centre is establishing itself in space provided within the Department of Geography. It is proceeding with a major study on the costs of manning container ships in Australia's overseas trades with Australian crews. In addition, negotiations are under way for important studies of transport developments in some Pacific Island countries. It is continuing work on truck queuing at container terminals and problems in Australia's export movements of coal and other minerals.

Director of the Centre

DR Ross Robinson is a Reader in the Department of Geography; he is a regional editor of the international journal Maritime Policy and Management; a former staffer of the United Nations in Geneva and Bangkok; and editor of the first major text on the region, the first major text on the region, the first major text on the region, the first major text on the region. Dr Robinson is a graduate of the Universities of New England, New South Wales (though his first two degrees were earned at the University of Newcastle campus) and the University of British Columbia in Vancouver, Canada. It was there, in his PhD program, that he became involved in transport research—with a large research grant from the Canadian government to look at commodity movements through the port of Vancouver.

In the late 1960s, while finishing his PhD, he was a consultant to UNCTAD in Geneva and later asked to join the staff. With two other port researchers he developed UNCTAD's port development program for ports in developing countries.

More recently he was invited to assist the UN's Regional Commission, ESCAP in Bangkok, as director of the port development program. This he did in 1975/76 and from 1978 to 1980.

Since returning to the University in early 1981 Dr Robinson has been active in research and consulting programs in Australia and Asia. He was a member of the ASEAN/Australia Joint Shipping Project and in 1984 was awarded a fellowship in ASEAN/Australian Relations at the Institute of Southeast Asian Studies in the University of Singapore. He is currently completing a book: ASEAN Ports: the high price of nationalism? He has recently completed studies on container terminal productivity in Port Jackson and Port Botany for the Bureau of Transport Economics in Canberra and for the NSW Government Department of Transport; in 1984 was invited to prepare the position paper for the BTE's Transport Outlook Conference on 'The Outlook for Australia's International Freight'.

Director of the Centre is Dr Ross Robinson
TWO major moves will be made during 1986 to strengthen the academic program of the University.

Although enrolments in the University have grown dramatically in recent years (more than 60 per cent since 1981) the number of senior staff, particularly professors, has expanded very little. Indeed, the proportion of professors to students or academic staff has become one of the lowest, if not the lowest, among Australian universities.

Accordingly, the decision was taken to increase the number of Chairs in the University over the next few years.

At the same time, the retirements of Professor Brinson in Metallurgy, Professor Brown in Biology and the Deputy Vice-Chancellor, Professor Clarke, together with the appointment of Professor Leal as Deputy Vice-Chancellor at Macquarie University, have created vacancies in the professorial ranks and the opportunity for new appointments. Our regret at the departure of respected colleagues who have given excellent service to their disciplines and to the University must be balanced by anticipation of the strengthening and renewal effect of new appointments. New professors who come from other universities introduce fresh perspectives and opportunities to reshape aspects of the academic program.

As a result of these vacancies and the creation of second Chairs in Electrical Engineering and Mathematics and a third Chair in Education, the University currently has on offer Chairs in Metallurgy and Materials Engineering, Computing Engineering, Health Sciences, Biology, Statistics and Education. It has already appointed Professor Ian Chubb, a neuroscientist from the Medical School at Flinders University as its new Deputy Vice-Chancellor (Academic and Research). We anticipate filling the other Chairs on offer by the middle of this year.

Applications have closed for all but one of the Chairs mentioned. We are extremely pleased with the response. Each of the Chairs has drawn an excellent field, including in most cases established full professors from other universities. The Biology Chair, for example, has attracted over 120 applicants, many of outstanding quality. We are confident of making first-class appointments to these vacancies and are confident that the new Professors will add substantially to our pool of academic talent and research interest.

At the same time, the post of University Librarian is on offer. As everyone knows the effective functioning of the Library is a matter of great concern to all academic staff and students in the University. Our Library is particularly pressed and will remain so until the extension, due to be started in June, has been completed a year or so later. It is pressed in other ways because of its relative newness and hence the smallness of its collection of books and monographs. Moreover, the exploding costs of serials limits the range our Library can order. While this is a problem for all libraries, the location of this University increases the difficulty for staff of obtaining access to serials subscribed for by other libraries.

So the capacity and strengths the new appointment will bring to the role of Librarian will be of great interest on campus. The person appointed will have to take the Library through the phase of transition from almost complete reliance on printed materials to increased reliance on electronically stored and accessed information. The revolutionary changes crowding in on libraries make it essential for us to secure a person with outstanding capabilities.

While the appointments to be made to the key leadership positions will be of critical importance to the future wellbeing of the University, equally important will be the second thrust of the University towards strengthening its research and postgraduate programs.

Professor Chubb has been appointed as Deputy Vice-Chancellor with a special brief to expand the numbers of postgraduate students, especially those undertaking research degrees, and the overall university effort in research.

During 1985 the University appointed Mr. Tom Moore as the Submissions and Research Contracts Officer in the Administration to provide a base for expansion of the research effort. He will work closely with Professor Chubb to try to expand the sources of research funds and to increase the proportion of successful applications.

In addition, during 1986 moves will be made to expand the financial support sources available for postgraduate students. The relatively limited amount of such support has been one of the critical impediments to expansion of postgraduate enrolments.

Consideration is also being given by the academic community to the restructuring of academic governance. As part of that re-consideration the concept of a Research Division is being considered. If adopted (which will be decided by mid-year) the structure will provide for a division which will have a proper support base in the Administration, together with a representative decision-making structure within which the most active and able researchers will be able to make appropriate decisions about competitive distribution of research funds, as well as the allocation of scholarships, conference and study leave and other similar matters, with the Deputy Vice-Chancellor committee chairman.

With the Deputy Vice-Chancellor as chairman of such a significant committee and with sufficient delegation to allow the committee to make prompt and effective decisions, it should be possible to give added impetus to the research aspects of the University.

Ken McKinnon

Two new professors for Wollongong

TWO new professors have been appointed in the University of Wollongong. Dr. J. W. Lovegrove has taken up his appointment as Professor and Chairperson of the Department of Psychology. Born in 1945, Dr. Lovegrove was awarded a BA in 1968, a First-Class Honours degree in 1969 and obtained his PhD in 1972—all from the University of Queensland. Since 1973 he has been on the staff of the University of Tasmania, initially as a Lecturer, as Senior Lecturer in 1979 and as a Reader in 1985.

Dr. Lovegrove has published extensively and has received many research grants. His current research interests include specific reading disability, colour-spatial processing, mono-colour rivalry and perceptual alternations, temporal processes in spatial frequency channels. Planned projects will consider the relationship between vision, phonological encoding and aspects of memory in specific reading disability. An article discussing Professor Lovegrove’s research appears elsewhere in this issue.

The other professorial appointment is that of Mr. J. F. Lowe who takes up his appointment as Professor and Chairperson of the Department of Business Policy and Operations within the next few months. Born in Derbyshire in 1945, Mr. Lowe was awarded a BA degree in Economics from the University of Wales in 1967 and an MA in Economics and Business Administration at Manchester University in 1968. Since then he has lectured at the universities of Nottingham and Bath. In 1984 he was an Australian Studies Visiting Fellow at the University of Queensland. During last year he was seconded as a Research Fellow to the Committee of Vice-Chancellors and Principals for the study of University Science Parks and Companies. Mr. Lowe is married and has four children.
Do visual deficits play a role in dyslexia?

A Specific-Reading-Disabled (SRD) child is one who has failed to learn to read at a level consistent with his intelligence and educational opportunities. It has been estimated that ten to fifteen per cent of the school-age population are specifically disabled in reading. This makes the problem greater than the combined occurrence of mental retardation, cerebral palsy and epilepsy.

When reports of this disorder first appeared at about the turn of the century, it was believed to be the result of some unspecified visual deficit. The disorder in fact was sometimes referred to as 'wordblindness'. Over the past thirty years, however, research into a visual contribution to SRD has declined for two reasons: first, extensive research failed to show systematic differences in visual processing between normal readers and SRDs; and second, a substantial body of evidence has shown that SRDs have language-related problems. This result has been viewed by some as making the hypothesis of a 'visual deficit' redundant. There still appears, however, to be insufficient data available on the causes of dyslexia for establishing widespread successful remedial programs.

Research conducted by Professor W. J. Lovegrove, newcomer to the Department of Psychology in The University of Wollongong, has been based on the assumption that previous 'vision' work in SRD has failed to find consistent results because it lacked an adequate theoretical framework for the investigation of basic visual mechanisms involved in reading. Such a framework is now available from contemporary vision research and it is within this framework that Professor Lovegrove's research has been conducted.

The most basic element in this approach is that within the visual system (from eye to brain) there are two subsystems with different and somewhat complementary functions. One, the sustained subsystem, is primarily concerned with processing detailed information in central vision (where we look when we read). The other, the transient system, is primarily concerned with processing general information from the periphery of the visual field (this information is also used in reading). Furthermore the transient system has the important role of integrating what people see in successive fixational pauses during reading. In skilled readers the functions of these two systems are smoothly integrated. Such integration seems to be essential for normal reading.

Professor Lovegrove has conducted a great many experiments within this theoretical framework on approximately 200 normal and disabled readers. Our aim has been to assess the functioning of the sustained and transient systems separately. The general conclusion is that in SRDs there is normal functioning of the sustained subsystem. This helps to explain why so many previous investigations failed to show differences in visual processing between normal readers and SRDs. It also explains why most SRDs do not have losses in visual acuity (a measure of the sustained system). On the other hand, SRDs do have a deficit in the functioning of the transient subsystem. Professor Lovegrove's results indicate that this is true in approximately 75 per cent of SRDs and that it does not result from failing to read.

Two questions arise from this work. First, how do these visual deficits relate to known memory and language problems in SRDs? Do some children have only one type of deficit, or do some have visual deficits plus other deficits? The second question concerns whether or not remedial procedures can be improved by our new knowledge of visual processing in SRDs?

These questions will be investigated in the immediate future. It is worth noting, however, that the first level of information processing in reading is visual. A deficit of this level may have consequences for processing at all higher levels. It is hoped that the next phase of Professor Lovegrove's research will answer these questions.

University hosts American seniors

DURING January and February, seven groups—each of 40 senior Americans—joined senior Australians in educational programs arranged by The University of Wollongong.

For four groups, accommodation was at Illawarra Heritage—an overview of the history/geography/fauna and flora of the Illawarra. Lecturers in the program were Dr Winifred Mitchell, Mr Don Dinsdag, Mr Ben Meek, Mr Roy Kennedy and Mr Malcolm Harris (who was the educational co-ordinator for the program).

Three other groups stayed at Kioala on the far south coast of NSW at the caravan park opposite the ANU research station. Lectures on this program were co-ordinated by Mrs Ros Muston (Department of Biology) and included a study of the sand dunes, rainforest and marine biology.

From May to September 1986 a further six weeks of programs have been arranged at The University of Wollongong—the programs in the main being provided by the School of Creative Arts.
University research aimed at overcoming eye ailment in elderly people

RESEARCH being carried out in The University of Wollongong by Dr Roger Truscott in the Department of Chemistry is aimed at helping the elderly in Australian society. His research is concerned specifically with understanding the molecular basis of senile nuclear cataract formation in the eyes. The aim is to discover the chemical changes which occur to the lens proteins during senile nuclear cataract formation.

The normal lens is a transparent tissue consisting of 30 per cent protein by weight, whose function is to focus external light on the retina. Senile nuclear cataract is characterised by brown pigmentation and opacification in the inner core of the lens. However, the mechanism of nuclear cataract formation and the reasons for the development of nuclear cataracts are not known.

Expressed more specifically, the project involves structural studies on the brown pigment and protein-protein crosslinks after their isolation from human cataract lenses by following a digestion procedure which Dr Truscott has recently developed.

Discovering the structure of the compounds will be of great importance in understanding the chemical modifications which lead to the formation of coloured, crosslinked and insoluble protein aggregates in the nucleus of the lens, resulting ultimately in a loss of lens transparency.

Senile cataract is one of the most widely spread afflictions in ageing people. The clouding of the lens that occurs impairs vision and can lead to blindness. There is at present no known means of preventing cataract and no known cure other than surgical removal of the lens of the eye. Cataracts are responsible for between 30 and 40 per cent of all cases of blindness in underdeveloped countries. Even in highly developed societies such as ours it represents a serious problem.

Progress in combating senile nuclear cataract is unlikely to proceed far without a detailed knowledge of the modifications which have occurred to the proteins in the lens during cataract formation. Once the structures of these products have been determined, one can then propose and hopefully test mechanisms of their formation. One may then be in a position to formulate strategies for the prevention of senile nuclear cataract formation.

Although research into nuclear cataract formation has been conducted for many years, until recently very little solid information was available on the changes which occur with the development of senile nuclear cataract.

Dr Truscott in earlier research demonstrated that the increase in insoluble protein associated with senile nuclear cataract formation was due to the formation of a specific cataractous protein fraction which was insoluble in urea but which could be solubilised with urea containing mercaptoethanol. Since this fraction contained most of the colour of the lens, it was called the yellow protein fraction (YPF). The YPF was shown to be localised in the nucleus of the lens and was shown to consist of high molecular weight aggregates containing lens proteins cross-linked together through covalent bonds of an unknown type.

The increase in nuclear colour of the lens was found to be associated with marked changes in the levels of sulphhydryl compounds in the lens. In the most advanced form of nuclear cataract, a reduction of over 97 per cent in the content of free sulphhydryl groups in the nuclear proteins was observed. In these same proteins, Dr Truscott showed that approximately 50 per cent of the total methionine residues had been converted to methionine sulfoxide.

In an initial attempt to uncover some of the other chemical changes which had taken place, the nuclear proteins, samples of the YPF and normal lens proteins were totally digested with proteolytic enzymes and the products analysed. An unusual compound, anthranilic acid, was identified in the cataractous digest but was absent from the normal lens protein digest.

Dr Truscott’s thesis for his PhD was on this subject at Melbourne University.

Sydney students discover Wollongong University

SYDNEY students are discovering more and more that Wollongong University, located on the leisure coast, offers a very clear and often superior alternative to study in the metropolitan area.

A Wollongong University survey shows that students are reacting unfavourably to the impersonal atmosphere encountered in the much larger Sydney universities. The result is that enrolment of bright students from the city areas in courses offered by the Wollongong University has steadily increased.

A few metropolitan students have in the past accepted offers of enrolment at Wollongong with a view to transferring their studies later on to a Sydney institution. In fact, when the opportunity to transfer arises, most of the students are unwilling to make the change and others seek mid-course changes to Wollongong.

These are the students who have discovered the advantages of studying at a smaller, yet academically rigorous, institution—one that offers a wide variety of subject areas, accessibility of academic staff, and the charm of the south coast (including the beaches). Electrification of the Illawarra rail line has brought Wollongong effectively closer to Sydney. The result is that Wollongong University is now much more conveniently located for the people living in the southern suburbs.

1. The survey referred to is entitled Surveys of New Students Who Undertook the 1983 and 1984 Examination in Sydney Metropolitan High Schools—Analysis of Results.

Next issue

Next issue of the Gazette will be published on May 20. Deadline for copy describing research projects or major Faculty or Departmental developments is April 24.
Stained glass panels latest art acquisition for the University

THE University has made a new addition to its permanent art collection. The colourful stained glass panelled work, entitled Australian Bird Series, crafted by Albie Lenartas from the School of Creative Arts, has been purchased at a cost of $15,000.

The work depicts 12 different Australian birds, each constructed individually and fitted together into panels three across and four down, each measuring 1.9 m x 1.4 m. It is proposed to have the work installed as part of a wall in the new extensions to the Library, due for completion in late 1987.

Albie Lenartas is a technician in the School of Creative Arts. He began work on the project in April 1983 and completed it in July 1985. It was one of the central features in an exhibition of work by Creative Arts staff, held in the Long Gallery late last year.

To construct the work, Albie used the unusual and labour intensive technique known as the 'copper foil technique', which was originally devised in the late 19th century. It differs from the more conventional lead-light technique in that the individual glass pieces are fitted more closely together, using copper foil which is soldered to each seam. By using this method, Albie was able to achieve a feeling of lightness and fragility in the birds' plumage and an intricacy of design which could not have been achieved with lead. The foil technique is also much stronger, and according to Albie, the panels will not weaken structurally with age.

Extra encouragement for prospective Aboriginal students

A UNIVERSITY of Wollongong preparation course for Aboriginal people began earlier this month (March). The course is being conducted by the University of Wollongong in conjunction with Wollongong TAFE College.

The course is a pre-entry course designed to provide students with an alternative means of entry to university. Students are being given the opportunity to develop the necessary skills for university entrance and for participation in the university community.

Subjects proposed for this course include: English, Mathematics, Aboriginal Studies, Computer Applications and Typing Skills, Business Administration, and Community Studies.

The course is to run for 24 weeks, with classes being held each day from 9 am to 3.30 pm. It is anticipated that there will be breaks during school holidays.

The University, of course, hopes that this course will provide increased opportunities for higher education for Aboriginal people in the community. The course is thus being conducted as part of the University's Participation and Equity Program and is being funded by the Commonwealth Government under its Participation and Equity Scheme.

Ben Meek—new career at 55

BURSAR at the University of Wollongong from 1972 to 1981 and Secretary-Manager of the Friends of the University since 1981, Ben Meek had become something of an institution on campus when he retired at the end of last year. His going was marked by a special dinner party given by the Vice-Chancellor and by a party for friends and close colleagues, organised by the Friends. Ben's contact with the Friends will be maintained in the years ahead, during which he will be involved in a new career embracing many interests close to his heart and mind.

Included among these is his presidency of the Kiama District Historical Society, chairmanship of the National Trust of Australia (NSW) Illawarra and Shoalhaven Branch, his membership of such disparate bodies as the Environment Heritage Committee of Wollongong, Shellharbour, Kiama; the Kiama Municipal Council and Bicentenary Committee; Kiama Municipal Council Heritage Week Committee and, as though that weren't enough for that agile mind, the presidency of the Illawarra and Southern Highlands Chapter of the Museums Association of Australia (NSW) is there for good measure.

Honour for Geoffrey Brinson

EMERITUS PROFESSOR Geoffrey Brinson, who retired as Professor of the Department of Metallurgy last year, has been made an honorary professor of the North-Eastern University of China.