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NEWS FROM THE UNIVERSITY OF ADELAIDE

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L to R: Simon Maddocks (Animal Science), and Bill Breed and Eleanor Peirce from Anatomy. Their work on sperm production in native rodents could hold a key to understanding infertility in human beings. Freelance science writer David Mussared reports on page 4. Photo: Brenton Edwards

National nursing research institute opens

A new national centre for nursing research will be launched at a major conference being held this week by the University of Adelaide and the Royal Adelaide Hospital.

Called the Joanna Briggs Institute for Evidence Based Nursing, the centre has been established in recognition of the need for a collaborative approach to research and its integration into clinical practice.

The institute will form a network of six research centres nation wide, linking expert nursing researchers, clinicians and managers from South Australia with those in New South Wales, Queensland, Victoria, Tasmania and Western Australia.

Based within the University of Adelaide's Department of Clinical Nursing at the Royal Adelaide Hospital, the institute takes its name from Joanna Briggs — a South Australian nurse who was appointed the first matron of the RAH in 1856.

Professor Alan Pearson, head of the University of Adelaide's Department of Clinical Nursing, is the Director of the new institute; Associate Professor Kaye Challenger, head of Nursing and Patient Services at the RAH, is the Chair of the institute's management committee.

Associate Professor Challenger said

the new institute would have a positive influence on nursing and health care delivery.

"This collaboration is unique in the way it links nurses across all States and Territories, and in conjunction with the collaborating centres around Australia we will identify what research has been done and where it's lacking," she said.

"The whole emphasis on evidence-based nursing will certainly contribute to the effectiveness of nursing care

and, in turn, on cost effectiveness. It's all about basing the delivery of care on the best available evidence, whether that's as nursing clinicians or nurse managers."

Associate Professor Challenger said it was important that the name of Joanna Briggs was attached to this new institute.

"When Mrs Briggs was first appointed as matron of the hospital her staff consisted of three nurses and four wardsmen. On her retirement in

1866 the hospital employed 21 nurses. We hope to honour this early Australian nursing leader and pay tribute to her pioneering efforts in the profession," she said.

Details of the Joanna Briggs Institute will be officially announced to more than 200 delegates from around the world on 3 December, during the Second Annual Nursing Practice Conference at Adelaide's Hilton International Hotel.

—David Ellis

Humanities/Social Sciences: new Head

Eminent literary scholar and authority on the works of Thomas Hardy, Professor Penny Boumelha, has been appointed Head of the University of Adelaide's Division of Humanities and Social Sciences.

Professor Boumelha is the third Divisional Head appointed by the University in recent weeks following an organisational restructure earlier in the year. She also joins the University's 11-person Senior Management Group.

Announcing the appointment, Vice-Chancellor Professor Mary O'Kane said Professor Boumelha had won enormous respect for her scholarship, teaching and innovative management since joining the University in 1990 as Jury Professor of English Language and Literature.

She said Professor Boumelha had been instrumental in achieving the establishment of a Chair of Creative Writing, a joint project between the University and the State

Department for the Arts and Cultural Development. She has been a member of the University Council since 1993.

Professor Boumelha said she looked forward to encouraging further recognition of the value of study in the humanities and social sciences. "In my view, study in these areas plays a significant role in educating people for our society, helping to develop to their fullest extent such fundamental skills as literacy, articulacy and critical thought," she said.

She said it was likely that the intrinsic value of generalist degrees such as the Bachelor of Arts, as well as their ability to contribute core studies to professional degrees, would continue to attract support and goodwill from the community.

In terms of student numbers, Humanities & Social Sciences is the largest Division at the University.

—Patricia Cree

INSIDE

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Work in a cold climate

One of the best things about being Vice-Chancellor involves attending a range of functions which provide entertaining ways for me to learn new and interesting things about the University. Last week I particularly enjoyed the launch by Doug McEachern of Carol Bacchi's new book *The Politics of Affirmative Action: 'Women', Equality and Category Politics*. The function was great fun and I ran into friends from other universities both here and interstate and from outside the University. But what impressed me most was Carol's speech which reflected on changes to higher education from a personal perspective. Carol compared her life and the launching of her book in 1990 with her life now and the launching of her new book. She went on to say, "I don't wish to sound depressed or depressing but if I were asked about my vision of the University of the future it would be a vision as concerned about people as about ideas, a place dedicated to challenging the imposed separation between minds and bodies, between public and private, rather than one which supports and thrives on those distinctions". Her words immediately made me think of our climate survey, the summary of which is contained in this copy of the *Adelaidean*.

I find it worrying that the results show we are very concerned about the current workplace environment; there is concern about staff being heard by Senior Management, and concern about opportunity for advancement. Clearly we must focus on what needs most to be improved and on what is most important to our staff. I am told by the consultants who advised our climate survey reference group that as a University we differ from high performing organisations recently surveyed. In those organisations staff perceive that the provision of high quality services and the satisfaction of the client group are critical to the organisation's success. It may be a question of example; as we learn to focus more on all our clients, both internal and external, we too will be seen as a high performing institution in technical quality terms. Our Director of Quality has emphasised to me that it is important to institute best practices. I believe we must link these two things together and work out how to make the workplace at this University satisfying and attractive so that our concern quite properly shifts to our external client groups. Ideas please!

MARY O'KANE

Collective Society



I write in appreciation of the conference "Are we to be a Collective Society?", arranged by the Centre for Australian Studies within the University on 28 October, 1996.

It reminded those who attended of our mutual responsibility for the poorly housed, the young unemployed, our reduced health

and legal services and the needs of the first Australians.

This free conference, organised by members of the Politics Department and other colleagues, enabled an enthusiastic audience to discuss their responsibilities as citizens without the barrier of high enrolment fees which so often apply in the continuing education agencies of this State.

Colin Lawton
Lower Mitcham

ADELAIDEAN ON THE WEB

A reminder that the Adelaidean is now available on the WWW. To view the paper you need Acrobat Reader, which is free software and easily downloaded.

Comments on access and ease of use are welcomed, as the site is still experimental.

<http://www.adelaide.edu.au/Adelaidean/home.html>

GUEST COMMENTARY

A matter of money

Equity in access is a principle which universities rightly espouse. It is a specific expression of one of the "core values" of this University, which extols the values of a "humane and just society, with a special commitment to equal opportunity and social justice".

What then of the foreshadowed change in Commonwealth regulation of university undergraduate entry criteria so as to permit up-front fee-paying students to the extent of 25% of locally based enrolments?

No-one would seriously argue against the proposition that ideally, education, including tertiary education, should be universally free, that is, paid for by the community.

But universities should be cautious about identifying with the proposition that entry should be available only if the government pays. Logically that proposition means that if the government (for whatever reason) decided not to pay for anyone, universities would close their doors.

It is a very serious step to go so far as to deny access to higher education to any academically qualified student who can, by one way or another, find the means to pay for it. To do so flies in the face of the essential nature of universities as open institutions of learning. Bearing that in mind, it seems to me that the proposed change is the lesser of two evils.

It must be accepted that once we admit up-front fee-paying students, some will be admitted who are academically inferior to students who do not have the resources to pay. But such a situation is inevitable unless the government pays for everyone. It does not give universities the right to close their doors in the face of local students who are able and prepared to pay, perhaps from their own exertion.

The ready acceptance of money from the hands of overseas students and our rejection of it from local intending students is obnoxious.

That the existing government funding does not extend to everyone who is academically qualified for admission will be demonstrated when we admit fee-paying students who have that qualification.

If it is said to be inequitable to grant admission to students with means ahead of a student without means, I can only say that any departure from the principle that admission should be governed solely by reference to academic merit is likely to give rise to inequities.

For example, the Fairway scheme (which I support), because it applies arbitrarily within certain geographic areas, is likely to lift the marks of some students who would otherwise never achieve the marks necessary to gain entry to the university, whatever the secondary school they attended or whatever the means of their parents.

The introduction of some fee-paying students will open up new sources of funding such as employers, trade unions, and religious and charitable bodies who, presumably, will now be permitted to sponsor undergradu-

by
The Honourable
Justice Perry
SA Supreme Court

ate students. Furthermore, it means that students denied assistance by the government may now have the opportunity to work to put themselves through the university.

It has been suggested that to have a mix of up-front and deferred fee-paying students will bring tension between two classes of students with different expectations and demands. But we have that mix now in that we have up-front and deferred (HECS) funded local students and fee-paying overseas students. I have not seen any evidence that this brings tensions of that kind. It is an insult to the professionalism of our staff to suggest that it should. If it brings tensions between students themselves, it is a sad reflection on their outlook. I find it hard to believe that any student should think it worthwhile making comparisons between those who happen to be paying fees up front and those who do not. In any event, it is not a statistic which should even be known to other students. Neither should any student have any reason to think that the source or timing of payment of fees could possibly have any effect on the services offered by the University.

The admission of up-front fee-paying local students will have the desirable effect of forcing us to reconsider our role as a teaching institution. Quite apart from anything else, it will oblige us carefully to cost our undergraduate fees. That will be a difficult task. It may be that to keep fees within reasonable limits there will always be the need for some across the board non-refundable government contribution to capital and recurrent funding. That circumstance may provide a legitimate reason to differentiate between undergraduate fees paid by local as opposed to overseas students. But otherwise I cannot see that there should be any differentiation between the two. Neither should undergraduate fee income be used to subsidise the cost of postgraduate study.

All in all, we will have to make our costing much more transparent. I see nothing wrong with that.

Of course, there are some dangers. Above all else, the introduction of up-front fee-paying students should not be used as a pretext by governments to reduce the number of publicly funded places in universities. Likewise, we will have to be astute to ensure that we do not admit undeserving students just for the money. We must resist the temptation to pass them when they deserve to fail. The temptation to do so exists under the present system of funding, and will exist whatever the method of funding.

Given the fact that student numbers have grown from 350,000 to 605,000 since 1983, governments have a right to address concerns as to the cost to the community and its incidence.

The challenge for universities such as ours is not to allow the resultant preoccupation with the economic aspects of our operation to deflect us from the task of maintaining uncompromisingly high academic standards in a teaching environment which is as free from government regulation as we can make it.



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New Adelaide Scholarships to help students fund Uni study

School leavers, others new to higher education, and outstanding students from around Australia will benefit from a new University of Adelaide scholarship package.

University Vice-Chancellor Mary O'Kane says the Adelaide Achiever Scholarships will provide support for outstanding students.

School leavers and others new to higher education will be eligible for 30 scholarships, each of \$1000, applicable to most of the University's Bachelor courses.

Students who transfer to Adelaide to undertake Honours, and others who transfer part-way through a degree, will be eligible for up to 50 scholarships of \$2000 to assist with

accommodation and other student expenses.

Students in agricultural and natural resource sciences, humanities and social sciences, economics, performing arts, architecture, engineering, mathematical sciences and science will be eligible for these new awards.

As well, some 30 students from financially disadvantaged backgrounds will receive valuable full or half scholarships for the cost of the Higher Education Contribution Scheme (HECS). Ten full HECS scholarships and 20 half HECS scholarships will be awarded to eligible students in any of the University's undergraduate courses.

"With higher HECS expected to apply from next year, we want to play our part in ensuring outstanding students don't miss out on university study because of the cost," Professor O'Kane said.

The University also offers a range of other undergraduate scholarship assistance, including help with the cost of international student exchanges and summer research scholarships, as well as some 1600 scholarship opportunities for post-graduate study.

More information about the scholarships can be obtained from the University's Student Information Office, telephone 1800 061 459.

—Patricia Cree

Developing the next generation of indigenous leaders

Aboriginal and Torres Strait Islander participation and success in higher education will be given a boost by a unique housing initiative affiliated with the University of Adelaide.

From February 1997, the Mattanya Housing Association will provide affordable and secure housing for indigenous students of the University of Adelaide.

Most importantly, Mattanya — the Kaurna word for "owner" — offers the academic and community support needed for Aboriginal and Torres Strait Islander students to reach their full potential.

The Chair of Mattanya, Mercy Glastonbury, said Mattanya aimed to promote academic excellence and support the development of future Aboriginal and Torres Strait Islander leaders.

Mattanya's stunning facilities are in Finnis Street, North Adelaide. The two refurbished heritage houses contain single bedroom, self-catering accommodation for 18 students and a resident Academic Director, who will oversee the development of an indigenous community of scholars.

Ms Glastonbury, who is also the Director of Wilto Yerlo at the University of Adelaide, said that in recent years there had been a significant increase in the number of Aboriginal and Torres Strait Islander students at the University.

Today, there were 130 students enrolled across most disciplines at all levels. The University also has two programs of national significance — the Centre for Aboriginal Studies in Music and the Aboriginal Land Management Program.

"For some indigenous students, universities can be alienating places," Ms Glastonbury said.

"In addition, there is unquestionably a link between a student's academic success and the quality of housing.

"Feedback from parents and potential students indicates that tertiary study opportunities for indigenous students from interstate or



L to R: PhD student Dennis Appo, Joe Nolan from the SA Community Housing Authority, Mercy Glastonbury and Brian Warrior from Aboriginal Hostels outside the Mattanya development. Photo: David Ellis

country areas is limited by a shortage of appropriate accommodation.

"Mattanya will take the worry out of finding suitable and affordable accommodation, as well as being a place where students can access the support and facilities needed to achieve their best.

"Indigenous Australians are under-represented in higher educa-

tion, but we are confident the supportive academic and community environment provided by Mattanya will make a difference."

Mattanya was established with the support of the University of Adelaide, the South Australian Community Housing Authority and the Adelaide City Council.

—David Washington

Review of Senior Management and Administrative Structures

The Vice-Chancellor, Professor Mary O'Kane, has decided to initiate a review of the University's senior management and administrative structures.

The review will be conducted by Emeritus Professor David Penington, former Vice Chancellor of the University of Melbourne, who will visit the University beginning 9-10 December and is expect-

ed to submit a report early in 1997.

Professor O'Kane said she believed the time was ripe for such a review.

"The aim of the review will be to achieve the best possible collegial policy development within a management structure adapted to the new higher education environment in which we find ourselves," Professor O'Kane said.

The News IN BRIEF

ACADEMY FELLOWSHIP

Dr Chris Mortensen from the Department of Philosophy was among nineteen Australian scholars elected as Fellows of the Australian Academy of the Humanities last month.

Dr Mortensen's publications include works on the philosophy of mathematics and science, particularly his recent book *Inconsistent Mathematics*, on the philosophy of mind, and on aesthetics.

POPULATION CONFERENCE

More than 250 delegates from around the world are converging on the University of Adelaide to discuss the future of Australia's population.

The Australian Population Association's 8th National Conference will be held from 3-6 December in the Napier Building, North Terrace Campus.

The conference is the major biennial gathering of demographers, policy makers, planners, academics, researchers and practitioners from the private and public sectors in Australia and overseas.

Almost 100 papers will be presented during the conference, which this year focuses on "Australia's population into the Next Millennium".

Issues to be discussed include the growth and distribution of population, age and health, migration, housing, indigenous populations, and Australia's involvement in Asia.

ASQ LEADER'S LAST CONCERT

William Hennessy will give his last performance as leader of the Australian String Quartet on Friday 6 December in Elder Hall.

Mr Hennessy, a senior lecturer in the Elder Conservatorium, will take up the position of Head of Strings at Melbourne University in 1997.

For this final performance he has chosen Schubert's two-cello Quintet, with former ASQ member (and fellow founding member) Janis Laurs playing the additional cello part.

The free concert will start at 1.10pm but early arrival is recommended because organisers are expecting a full house.

GLENELG SHORELINE MODEL

A scale model showing the future of Adelaide's Glenelg shoreline has been built by the Department of Civil and Environmental Engineering for EngTest, the commercial arm of the Faculty of Engineering.

The model, measuring 25 metres by 15 metres, represents about one kilometre of the Glenelg beach. EngTest is using the 1:60 scale model to study the possible effects of the proposed Glenelg Safe Harbour and Marina, designed by engineers and managers Connell Wagner.

The test program involves creating one-in-100-year storms with waves equivalent to four metres in height. Sophisticated computer technology measures the wave height inside and outside the model marina, which is enclosed by two breakwaters.

The model was built at the Department of Transport's Walkley Heights depot and is part of EngTest's involvement in STARS (Southern Testing And Research Services). On completion of the project, it will be used by Civil and Environmental Engineering researchers Dr Martin Lambert and Dr David Walker for the promotion of teaching and research in coastal management.

Special investigators get down to basics

The plastic vial filled with tiny flies and larvae is more than just a tool of trade for geneticists Robert Saint and Helena Richardson — it's a source of inspiration.

"When you look at that, it strikes you how amazing it is that one cell can develop into such a complex organism," says Professor Saint.

Professor Saint, the Professor and Head of Genetics at the University of Adelaide, and Dr Helena Richardson, an Australian Research Council Fellow in the Department of Genetics, are the rare joint winners of an ARC Special Investigator Award, worth \$680,000 over the next three years.

The tiny fly is *Drosophila melanogaster* and it is the model organism for the pair's impressive work examining how genes function and control cell proliferation during animal development.

Among their discoveries, Professor Saint and Dr Richardson identified a gene, the presence of which is essential for cell proliferation. This gene is over-expressed in some forms of breast cancer — cancer being inappropriate cell proliferation.

The pair also discovered a new class of regulatory genes and were first to show that a member of this class of



Helena Richardson and Robert Saint: Photo: Rick Barrett

genes is essential for normal embryonic development.

The award means that Professor Saint and Dr Richardson will have secure funding for the next three

years, removing the time-consuming task of writing grant applications.

"The award gives us an opportunity to be even more adventurous," Professor Saint said.

The geneticists' work examines the broad questions of how development is regulated by the genetic information stored in the chromosomes of a cell, including how differential gene activity controls cell division, and how that control feeds into the way that an animal develops.

How does a cell "know" when to divide and when not to divide? Which genes are active or inactive during cell proliferation? A cell has to stop the process of division before it differentiates into different kinds of tissue. How do genes control this process?

"We are trying to identify the genes involved in the regulation of these processes and understand how they work together to constitute the genetic program that regulates development," Professor Saint said.

"We are looking to discover the answers to fundamental questions about a fundamental biological process.

"It is difficult to predict specific applications for our work but there is a very wide base because it's such a fundamental process. It could have implications for developmental disorders in humans and animals or be used for the modification of animal or plant characteristics."

Continued on Page 5

Native rodent sperm holds infertility hope

A group of obscure native Australian mammals, sometimes forgotten in conservation debates, could prove a key to understanding why human sperm counts in many parts of the world are falling.

Three University of Adelaide researchers are joining forces to try and unlock some of the mysteries of male fertility, and infertility, in Australia's native rodents and other placental mammals.

Placental mammals — particularly native mice and rats — have tended to be overshadowed in conservation research by Australia's better-known native marsupials and monotremes.

But in a project which has implications for everything from the search for the male pill to rescuing endangered wildlife, researchers Bill Breed, Simon Maddocks and Eleanor Peirce

aim to explore the surprising diversity in male reproductive organs among native placentals.

Australia's placental mammals are relative newcomers. They migrated south into Australia only in the past five million years, as slow tectonic movement pushed the southern continent to within striking distance of Asia. Marsupials and monotremes, by contrast, have been in Australia since it began separating from the Gondwanan supercontinent some 60 million years ago.

But Australia's rodents are amazingly diverse — particularly when it comes to the size of their testes, and the number of sperm they produce. Dr Breed, from the Medical School's Department of Anatomy, said for their size some had very large testes, accounting for anything up to five per cent of their body weight.

Others, he said, had tiny testes. Those of hopping mice, for example, made up only 0.15 per cent of their body weight.

No other group of mammals in the world harbours such a diversity in testes size. Human testes, by comparison, account for about one per cent of body weight.

Dr Breed and Dr Maddocks believe that comparing the processes of sperm production in such very different, but related, species represents a great scientific opportunity.

Dr Maddocks, who is head of the University's Department of Animal Science, said sperm were manufactured in the body in a kind of continuous production line. Learning which cell-signals were needed to make sperm in different mammal species might point the way to potential male contraceptives.

As well as having human uses, he said, such tailor-made contraceptives could be fed in baits to feral animals to stop them breeding — but only if scientists could be confident other animals would not be affected.

Dr Breed said knowing how sperm matured in the bodies of different native placentals could also pave the way for new artificial insemination techniques — techniques which might one day help save endangered species.

He said scientists needed to learn how to freeze and thaw rare mammals' sperm and ova; and how to achieve in vitro fertilisation (IVF) and embryo development so embryos could be transferred to recipient mothers. In the long run, such techniques might prove to be the only way to save some native species.

"You can't just put a male and a female together and assume you're going to get offspring, as most native rodents do not reproduce readily in captivity," Dr Breed said.

"There are a number of species living now where there are at most only a few hundred individuals left. If they are going to sit around in captivity and die, without us preserving their germ plasm, it's a wasted opportunity."

Dr Maddocks said he also hoped studying the testes of native placentals might help throw light on one of the great puzzles of the 20th century: the steep decline in human sperm counts in some parts of the world over the past 50 years.

Researchers overseas have speculated that the decline might be caused by modern synthetic chemicals, acting as oestrogen-like hormones and suppressing sperm production. If so, they argue, human fertility might be under threat.

Dr Maddocks cautions that the synthetic oestrogen claim is but one possible cause, and believes other factors may be at work — such as sperm being made and stored at warmer-than-natural temperatures due to changed clothing and work habits.

Sperm production is best at temperatures slightly lower than body heat, and he argues that close-fitting underwear, obesity and long hours of sitting down are at least as problematic as environmental chemicals.

Because the huge diversity of testicle size among native rodents is matched by a huge diversity in sperm production and quality, comparing such details in different species could give important clues to what might be happening with humans.

Dr Maddocks said his senior colleague, Professor Brian Setchell had recently collated a body of evidence which showed there had been no matching decline in sperm counts among a variety of livestock and other animals.

—David Mussared

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The poisons within: 'do what your mum says'

Scientists should worry less about cancer-causing chemicals used by farmers and industry, and more about the carcinogens made inside people's bodies.

That's according to University of Adelaide toxicologist Philip Burcham, who is breaking new ground for his discipline by studying endogenous poisons — made inside the body — instead of external (exogenous) chemicals.

Until now, he said, toxicology had been preoccupied with exogenous chemical threats. However, it was now time for the discipline to "mature a bit", and to assess the risks posed by endogenous chemicals.

Dr Burcham said only about five per cent of human cancers were thought to be caused by artificial chemicals from pollution or the workplace. But up to 70 per cent might be triggered by chemicals released during the breakdown of food.

"We put a lot of resources in minimising exposure to modern chemicals, which are potent, but we may be making a mountain out of a molehill," he said.

"Traditionally toxicologists have been concerned with synthetic chemicals which are used in industry or which are released into the environment by industry."

"While these synthetic chemicals present significant risks to individuals in some occupations, the rest of us are exposed in such low doses that they are unlikely to contribute to disease."

Dr Burcham, from the University's Department of Clinical and Experimental Pharmacology, has spent the past three years using a National Health and Medical Research Council (NHMRC) grant to study how food digestion and normal metabolic processes can spawn toxic chemicals.

Scientists have long known that food uptake by body cells produces some highly reactive by-products, including tiny, negatively charged molecules called hydroxyl radicals. Hydroxyl radicals react readily with DNA, causing mutations which may lead to cancer.

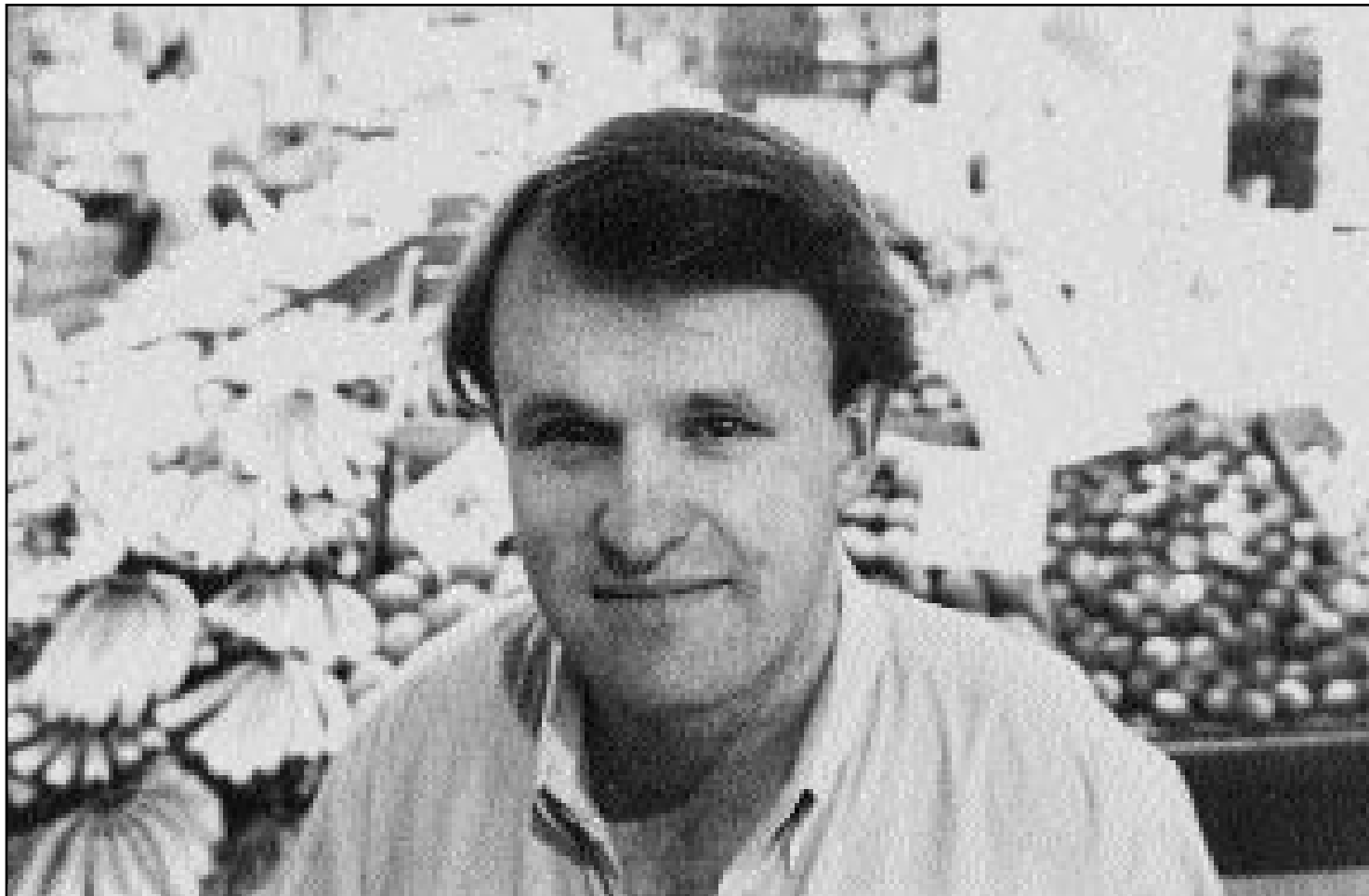
However, Dr Burcham said hydroxyl radicals were highly unstable, and it was difficult to see how they could find their way through a cell's interior to reach the DNA in its central nucleus. The radicals were so unstable they would react with the first molecule they encountered on the way, and would be destroyed.

Instead of attacking DNA, he said, the radicals were more likely to react with fatty membranes within the cell. A hydroxyl radical reacting with a membrane might be just the first link in a cancer-causing chain.

Cell membranes are made up of long, chain-like lipid molecules, which are broken up when they react with hydroxyl radicals. Among the products of such reactions are peroxy radicals, which are much larger and more stable molecules than hydroxyl radicals.

Dr Burcham said because peroxy radicals were less reactive than hydroxyl radicals, they could survive longer and travel further within a cell, and that might make them as dangerous to DNA as the more unstable hydroxyl radicals.

Dr Burcham and his colleague Louise Harkin have been examining in detail, initially using bacteria, whether or not peroxy radicals can



Philip Burcham — "eat lots of fruit and vegetables". Photo: Brenton Edwards

cause significant damage to DNA. They have found that they can.

They have shown, in the test tube, that peroxy radicals can react with DNA, causing subtle mutations by snipping out single letters from the genetic code.

If the same process happens in large animals, Dr Burcham said, peroxy radicals might well prove to be important contributors to the kind of DNA damage which can trigger cancer.

He said such cellular and genetic damage was a natural process, which was part and parcel of human aging. But he said diet could have a major influence on how fast it happened.

Dr Burcham said health studies around the world had shown repeatedly that people whose diets included large amounts of fruits and vegetables were less likely to suffer from cancer. Why, however, remained a mystery.

It was well-known that fruit and vegetables contained high levels of antioxidants such as beta-carotene and vitamin E, he said, and recent research had showed these were especially effective in mopping up peroxy radicals in cell membranes.

Dr Burcham said he suspected people's "internal dose" of peroxy radicals — and perhaps their cancer risk — was influenced by the amount they ate of food containing polyunsaturated fatty acids, which oxidised readily to produce hydroxyl radicals. Consuming such lipid-rich food, coupled with a low intake of antioxidants, might raise the risk, he said.

So far Dr Burcham has shown the mutagenic effects of peroxy radicals only in test-tube conditions. But he is now seeking funding for the next step: testing the entire chemical chain reaction in living cells or whole animals.

And what advice can he give to people to minimise their risk of cancer?

"Do what your mum says," he said. "Eat lots of fruit and vegetables."

—David Mussared

Special Investigators get down to basics

From Page 4

In their work on tissue growth, Professor Saint and Dr Richardson showed that a particular gene — Cyclin-E — is essential for cell proliferation.

"Cyclin-E is a very important regulator of whether a cell will enter into cell division or not," Dr Richardson said.

"Certain breast cancers have been shown to have an over-expression of Cyclin-E. In these cases, human cells are dividing much faster and entering cell division when they shouldn't."

In a separate project, the researchers are also studying a gene that inactivates other genes, and this inactivation is critical to having that genetic program function properly.

"In some cells gene expression is permitted to occur — in others it is prevented. Presence or absence

means the cell becomes a different type.

"Mutations in that gene cause quite bizarre development — parts of the embryo develop the wrong structures and the embryo usually dies as a result."

The advantage of the pair's model-based research is that it has the capacity to discover entirely new classes of genes.

The genetic functions of *Drosophila* and mammals are so similar that information gained from the fly is usually directly applicable to humans.

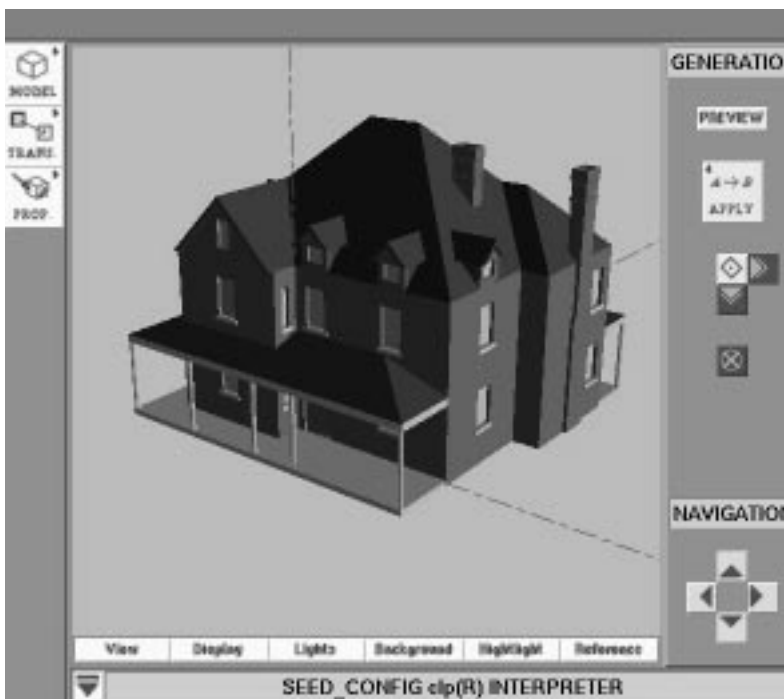
The advent of the human genome project means that the researchers often find that a similar human gene of no known function has already been stumbled upon.

The *Drosophila* work then suggests a function for that gene.

—David Washington

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3D program sows seeds of better design



A house design generated by the new SEED program

A new computer program that generates complex 3D building designs has been developed by a collaborative research team involving the University of Adelaide and Carnegie Mellon University in the United States.

The program, called SEED (Software Environment for the Early phases of building De-

sign), assists designers by partially automating many design tasks. The designer controls which aspects are automated and how they are automated. One example task is the design of a detailed two-storey house, which can be generated and appear on the computer screen within minutes.

Following a series of 'rules', the computer program starts

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with a hallway, then generates rooms around the hallway, followed by a flight of stairs, the second floor, and a roof. It then wraps a wall around, puts in doors and windows, chimneys and porches, until a complete house has been created — all at the touch of a keystroke.

"In essence, the process 'grows' a building, and with one set of rules we estimate there could be anything up to six trillion different house designs," said Dr Rob Woodbury, leader of the project in the University's Department of Architecture.

He said the idea behind the computer program, the first of its kind in the world, was to produce a tool that could help building designers do a better, more creative job.

"Designers are really interested in finding alternatives, but our current manual techniques of finding alternatives are very bad at that, because humans are really not very smart when it comes to systematic exploration of ideas," Dr Woodbury said.

"So if we had a system that was able to give us many different alternative solutions, we'd have a very useful tool

that, as designers, would allow us to improve what we do."

Research into the automatic generation of spatial designs has spanned the past 20 years and has involved various researchers around the world.

Dr Woodbury and his students began research eight years ago; this particular project was started at Carnegie Mellon four years ago. About five Adelaide researchers are involved, with some 20 from Carnegie Mellon.

One of the advantages of the program is that it can take into account local building codes and design standards, making sure the end product meets specific needs.

Dr Woodbury said the US Army Corps of Engineers had already sponsored the United States arm of the project for the possible design of town-house-style barracks for soldiers. Australia's large home building companies were also a potential market for the SEED program, he said.

"The large home builders spend a lot of time developing housing that can be built very inexpensively, and to do that they systemise their construction methods. Trouble is, the design variation isn't all that

great, so everybody ends up with virtually the same house.

"Some of the companies give prospective clients the ability to alter the floor plan, but they don't allow people to fundamentally change the spatial organisation of the house. Such alterations are important in Australia, and crucial when Australian companies export to other countries, with different cultures and expectations," he said.

"A system like this, using a housing firm's construction systems, could provide a much greater range of alternatives to potential clients and still keep the price down."

Dr Woodbury said the development of such a tool also had benefits for students.

"When you spend a lot of time exploring alternatives in this way, it starts to influence the way you think about designing, and therefore it starts to affect the way you teach.

"Some of my colleagues and I are finding that our students are now producing much stronger, more disciplined architecture, because they're really responding to this new way of looking at design," he said.

—David Ellis

Woomera telescope shines again



Photo courtesy of Dr John Patterson

The CANGAROO gamma ray telescope at Woomera has been given a new lease on life — thanks to a fresh coat of aluminium.

The 3.8-metre telescope was dismantled in October and the dish (pictured above being lifted by a crane) transported to the Anglo-Australian Observatory in Coonabarabran, New South Wales, where it received a new aluminium mirror coating.

For the past five years the telescope has been used by researchers from the universities of Adelaide and Tokyo to study energy sources in space as part of the CANGAROO (Collaboration of Australia and Nippon for a GAMMA Ray Observatory in the Outback) project.

Highlights have included studies of the Crab Nebula and galactic pulsars.

The Australian spokesman for CANGAROO, Dr John Patterson from the University of Adelaide's Department of Physics & Mathematical Physics, and Professor Tadashi Kifune from the University of Tokyo, drove the two-tonne dish from Woomera to Coonabarabran and back again.

Dr Patterson said the refurbishment was a great success. The new aluminium mirror had doubled the telescope's sensitivity, improving its ability to search for energy emissions from space.

The 3.8-metre telescope will continue to be used for research until construction of a new 10-metre gamma ray telescope is completed at Woomera in 1998.

—David Ellis

ARC and NHMRC Successful 1997 Grants, Fellowships and Scholarships

(Including total amounts awarded for 1997 and indicative amounts awarded for subsequent years 1998 and 1999)

AUSTRALIAN RESEARCH COUNCIL LARGE GRANTS

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Department of Environmental Sciences & Management

Professor HP Possingham and Dr IR Noble: *Animal population dynamics in a dynamic landscape: model and test* - \$40,000 (\$35,000 \$40,000)

Department of Plant Science

Professor GB Fincher: *Thaumatococcus proteins and (1-3)-Beta-glucanases in plant-pathogen interactions* - \$77,000 (\$68,000 \$71,000)

Professor RD Graham, Dr Z Rengel and Dr CF Jenner: *Transport of iron, iodine and copper to wheat grains, and its regulation* - \$10,000 (\$10,000 \$10,000)

Professor RD Graham and Dr SJ Barker: *Avoiding manganese stress in barley: molecular genetics to probe manganese efficiency* - \$60,000 (\$60,000 \$60,000)

Associate Professor P Langridge and Dr D Hayman (Genetics): *Sexual reproduction in the grasses: molecular biology of self-incompatibility in the grass Phalaris coarulescens* - \$57,900 (\$45,000 \$58,000)

Associate Professor KW Shepherd and Dr JG Ellis: *Molecular characterisation of recombinant L genes in flax having altered specificity to flax rust* - \$87,000 (\$64,000 \$66,000)

Associate Professor KW Shepherd: *Cytological and genetic homeology of wheat and barley chromosomes* - \$74,000 (\$74,000 \$74,000)

Department of Soil Science

Professor JM Oades: *Retention of organic matter in soils* - \$69,000 (\$64,000 \$63,000)

DIVISION OF ENGINEERING AND MATHEMATICAL SCIENCES

Department of Applied Mathematics

Dr PG Taylor, Dr NG Bean, Professor AE Krzesinski and Dr SA Berezner: *Management of telecommunication networks* - \$58,000 (\$60,000 \$62,000)

Department of Chemical Engineering

Dr APJ Middelberg and Dr CMM Franco: *Studies into the optimal design of a new immobilised membrane bioreactor with integrated product recovery for lactic acid production* - \$40,000 (\$39,000 \$42,000)

Department of Civil and Environmental Engineering

Dr MC Griffith and Mr JL Wilson: *The seismic integrity of walls and connections in unreinforced brick masonry buildings* - \$56,000 (\$47,000 \$48,000)

Professor RF Warner, Dr MC Griffith and Associate Professor A Kawano: *Non-linear dynamic analysis and design of concrete framed structures subjected to severe earthquake loads* - \$41,000 (\$42,000 \$43,000)

Department of Computer Science

Associate Professor MJ Brooks: *Self-calibration of a stereo head or single camera from video imagery* - \$79,000 (\$64,000 \$64,000)

Department of Electrical and Electronic Engineering

Dr A Bouzerdoum and Professor K Eshraghian: *A smart imager with visual processing capabilities* - \$78,000 (\$70,000 \$76,000)

Department of Mechanical Engineering

Dr CH Hansen: *Multi-axis and multi-mount active vibration isolation* - \$76,000 (\$67,000 \$65,000)

Dr RM Kelso and Professor AJ Smits: *Transverse jets: their flow structure, mixing and control* - \$55,000 (\$36,000 \$25,000)

Professor RE Luxton: *An exploration of continuously unstable jet flows* - \$81,000 (\$64,000 \$33,000)

Department of Pure Mathematics

Dr CM O'Keefe and Dr T Penttila: *Generalized quadrangles and flocks* - \$56,000 (\$58,000 \$60,000)

DIVISION OF HEALTH SCIENCES

Department of Medicine

Dr GA Wittert, Professor M Horowitz and Professor J Morley: *Regulation of food intake, energy balance, and fat storage in S. Crassicaudata (fat tailed dunnart)* - \$55,000 (\$53,000 \$51,000)

Department of Obstetrics and Gynaecology

Dr DJ Kennaway: *Tampering with the biological clock: the impact of perinatal drug administration* - \$62,000 (\$61,000 \$61,000)

DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Centre for Asian Studies

Dr JT Makeham: *Exegesis of the analects: A history of the Chinese commentary tradition (stage II)* - \$30,000 (\$22,000 \$40,000)

Professor AJ Watson and Associate Professor C Findlay (Economics): *The development of financial markets and institutions in rural China: the relationship between macro economic reform and growth* - \$50,000 (\$52,000 \$58,000)

Department of Politics

Professor D McEachern: *Australian forest policy: conflicts, politics and illusive resolutions* - \$21,000 (\$23,000)

DIVISION OF PERFORMING ARTS, LAW, ARCHITECTURE AND URBAN DESIGN, ECONOMICS AND COMMENCE

Department of Architecture

Dr RF Woodbury and Dr PW Eklund (Computer Science): *Exploring large spaces of building designs* - \$50,000 (\$50,000 \$50,000)

DIVISION OF SCIENCE

Department of Biochemistry

Dr S Dalton: *Defining the role of Cdc45p in control of DNA replication licensing factor activity* - \$67,000 (\$62,000 \$64,000)

Associate Professor JB Egan: *Operating the lysis-lysogeny developmental switch of coliphage 186* - \$40,000 (\$40,000 \$40,000)

Associate Professor JB Egan: *Control of late gene expression in the temperate coliphage 186 - strategy and mechanism* - \$60,000 (\$59,000 \$61,000)

Dr ML Whitelaw: *Signal transduction by the dioxin receptor - activation by environmental pollutants and aberrant regulation of genes* - \$67,000 (\$62,000 \$64,000)

Department of Botany

Dr DP Schachtman, Professor SE Smith (Soil Science) and Professor FA Smith: *Elucidation of the mechanisms of ion and metabolite transport in mycorrhizal symbiosis using molecular tools* - \$70,000 (\$70,000 \$70,000)

Professor JT Wiskich: *Experimental determination of the role of alternative oxidase in plant responses to stress* - \$58,000 (\$58,000 \$62,000)

Department of Physics and Mathematical Physics

Dr PG Bouwknecht: *Quasi-particles in two-dimensional conformal field theories* - \$53,000 (\$55,000 \$50,000)

Professor JR Prescott, Professor DJ Huntley and Dr GB Robertson: *Luminescence dating on a million year time scale* - \$60,000 (\$57,000 \$52,000)

Dr RJ Protheroe: *Neutrino, gamma ray and radio emission by astrophysical objects, and their contribution to the extragalactic background* - \$59,000 (\$53,000 \$55,000)

Dr AD Taylor: *Radiophysical studies of meteors* - \$58,000 (\$55,000 \$57,000)

Department of Physiology

Dr CB Daniels: *Pulmonary Surfactant and the Evolution of Air-breathing: Evolution of Control Mechanisms* - \$50,000 (\$50,000 \$50,000)

Department of Zoology

Professor RV Baudinette: *Swimming in Reptiles and Amphibians: Morphometrics, Kinematics and Energetics* - \$43,000 (\$34,000 \$45,000)

SPECIAL INVESTIGATOR AWARD

DIVISION OF SCIENCE

Department of Genetics

Professor R Saint & Dr H Richardson: *Special Investigator Award - Molecular Biology* - \$240,000 (\$240,000 \$200,000)

COLLABORATIVE RESEARCH GRANTS

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Department of Animal Sciences

Dr WS Pitchford, Dr BD Siebert and Professor CDK Bottema: *Genetics of*

Beef Quality Traits: Fat Metabolism - \$57,200 (\$57,200 \$57,200)

Department of Environmental Science and Management

Professor HP Possingham and Dr B Lindenmayer: *Spatial Population Modelling of Forest Birds for Guiding Native Forest Management* - \$31,948 (\$29,830 \$26,960)

Department of Horticulture, Viticulture and Oenology

Professor M Sedgley, Mr BL Tugwell and Mr CL Bennett: *The Development of Improved Scion and Rootstock Cultivars of Almond* - \$55,870 (\$56,769 \$57,666)

DIVISION OF ENGINEERING AND MATHEMATICAL SCIENCES

Centre for GaAs VLSI Technology

Dr N Burgess, Dr D Abbot and Professor D Gray (Electrical and Electronic Engineering): *Integrated Circuits for Interactive Mobile Multimedia Personal Communicator Systems* - \$100,000 (\$80,000 \$80,000)

Department of Computer Science

Dr PW Eklund and Dr SD Kirkby (Key Centre for Social Applications of GIS): *Emergency Service Response to Flood and Bushfire in 3D Urban Environments* - \$70,000 (\$70,000 \$70,000)

Department of Mechanical Engineering

Dr GJ Nathan, Dr D-K Zhang (Chemical Engineering) and Dr JP Smart: *Development of Low NOx Dual Fuel Burners for Rotary Kilns Utilising a Precessing Jet Flow* - \$100,000 (\$95,000 \$95,000)

DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Department of Labour Studies

Dr R Broomhill and Professor G Hugo (Key Centre for Social Applications of GIS): *A Strategic Spatial Model for Industry Development - Integrating Industry Auditing and Networking Techniques with Geographical Information Systems Technology* - \$56,100 (\$42,750)

ARC LARGE GRANTS SHARED WITH OTHER INSTITUTIONS

The following University of Adelaide staff have informed the Research Branch that they are co-Chief Investigators on successful ARC Large Grant applications for which the first named Chief Investigator is a staff member at another institution.

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Professor H Possingham, Environmental Science and Management and Dr M Bull (School of Biological Sciences, Flinders University): *Population dynamics of a parasite-host interaction* - \$80,000 (\$80,000)

DIVISION OF ENGINEERING AND MATHEMATICAL SCIENCES

Professor EO Tuck, Applied Mathematics and Dr MR Renilson (Australian Maritime College): *Dynamic squat of ships moving over a flat or undulating bottom* - \$42,000 (\$32,000)

DIVISION OF PERFORMING ARTS, LAW, ARCHITECTURE AND URBAN DESIGN, ECONOMICS AND COMMENCE

Dr NM Naffine, Law School and Dr MJ Davies, (School of Law, Flinders University): *Do men and women have property in their persons?* - \$37,000 (\$27,000)

DIVISION OF SCIENCE

Professor SF Lincoln, Chemistry and Dr KP Wainwright (Chemistry Department, Flinders University): *Metal ion activated molecular receptors* - \$77,000 (\$76,000 \$69,000)

Any other members of staff who are co-Chief Investigators in projects which have attracted grants administered by other institutions are requested to provide the Research Branch with details as soon as possible. This will enable the Branch to take the necessary action to ensure that the University of Adelaide receives the appropriate credit towards its Research Quantum for your contribution to those projects.

ARC and NHMRC Successful 1997 Grants, Fellowships and Scholarships

DIVISION OF PERFORMING ARTS, LAW, ARCHITECTURE AND UR- BAN DESIGN, ECONOMICS AND COMMERCE

Centre for International Economic Studies

Assoc Professor C Findlay and Professor P Drysdale: *Measuring Impediments to International Trade in Services and Their Impact on the Australian Economy* - \$100,000 (\$100,000 \$100,000)

DIVISION OF SCIENCE

Department of Geology & Geophysics

Assoc Prof B McGowran: *Geological evolution of the Gambier Basin in the central southern Australian continental margin: A focus for petroleum, minerals and hydrogeology* - \$45,000 (\$45,000 \$40,000)

SPECIAL RESEARCH CENTRES

DIVISION OF SCIENCE

Department of Physics and Mathematical Physics

Professor AW Thomas and Dr AG Williams: *Centre for Subatomic Structure of Matter* - \$400,000 (\$400,000 \$400,000)

RESEARCH INFRASTRUCTURE (EQUIPMENT AND FACILITIES) GRANTS

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Department of Horticulture, Viticulture and Oenology

Professor M Sedgley, Dr P Gibson and Professor G Fincher (Plant Science): *Plant Tissue Culture and Transformation Facility* - \$300,000

DIVISION OF SCIENCE

Department of Biochemistry

Assoc Prof JC Wallace, Prof GJ Barritt and Assoc Prof AH Bretag: *The South Australian Facility for Molecular Recognition* - \$300,000

Department of Chemistry

Professor JH Bowie, Professor RL Nathan and Professor RH Prager: *Adelaide Regional Mass Spectrometry Facility* - \$190,000

Department of Geology & Geophysics

Dr J Foden, Dr S Turner, Dr AJ Crawford, Prof R Vane and Assoc Prof J Jago: *Ultrahigh Abundance Sensitivity Thermal Ionisation Mass Spectrometer* - \$250,000

FELLOWSHIPS

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Department of Plant Science

Dr JN Pearson (Australian Postdoctoral Research Fellowship): *Transport of iron, copper and iodine to developing wheat grains*

DIVISION OF ENGINEERING AND MATHEMATICAL SCIENCES

Department of Pure Mathematics

Dr N Joshi (Australian Senior Research Fellowship): *Asymptotics and the integrability of nonlinear differential and difference equations*

Dr BM Polster (Australian Postdoctoral Research Fellowship): *Towards a unifying theory of topological circle planes: classification, subgeometries, moduli*

spaces and related finite and infinite incidence structures

DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Department of History

Dr SMJ Holton (Aust Senior Research Fellowship): *Sisters and citizens: Kinship, religion and social action in the lives of nineteenth century Quaker women*

DIVISION OF SCIENCE

Department of Biochemistry

Dr IB Dodd (Australian Postdoctoral Research Fellowship): *Stability in a transcriptional switch: repression despite passing transcription*

Department of Geology & Geophysics

Dr M Hand (Australian Research Fellowship): *Heat production and thermal regimes in Australian low-pressure high-temperature metamorphic terrains*

Department of Physics and Mathematical Physics

Dr AW Schreiber (Aust Research Fellow-

ship): Variational treatment of strong coupling quantum electrodynamics

AUSTRALIAN POST- GRADUATE AWARDS (INDUSTRY)

DIVISION OF AGRICULTURAL AND NATURAL RESOURCE SCIENCES

Department of Crop Protection

Assoc Professor SB Powles and Dr C Preston: *Identifying the mechanism endowing resistance to the herbicide paraquat in *Arctotheca calendula**

Assoc Professor JW Randles: *Sugarcane striate mosaic virus: genome organisation, diagnosis and epidemiology*

Department of Environmental Science and Management

Professor HP Possingham, Dr D Paton and Ms BJ St John: *Conservation and management of koalas and their food sources on Kangaroo Island, South Australia*

Dr FA Recknagel and Dr K Walker: *Impact of water extraction on the invertebrate fauna of artesian springs in northern South Australia*

Department of Horticulture, Viticulture and Oenology

Professor GB Fincher, Professor M Sedgley and Dr SJ Logue: *The secretion and movement of hydrolytic enzymes in germinating barley grain. Research on (1-4)-B-xylan-xylanohydrolase and limit dextrinase*

DIVISION OF ENGINEERING AND MATHEMATICAL SCIENCES

Department of Civil and Environmental Engineering

Professor RF Warner and Mr M Turner: *Safety and ductility of indeterminate concrete structures containing high-strength, low-elongation steels*

Department of Computer Science

Mr PW Eklund, Mr KR Johnson and Mr SD Kirkby: *Distributed Spatial Knowledge Representation and Reasoning*

NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

MEDICAL RESEARCH PROJECT GRANTS

DIVISION OF HEALTH SCIENCES

Department of Anaesthesia and Intensive Care

Professor WB Runciman and Dr RN Upton: *Pharmacokinetics of gases: Development of integrated experimental and modelling methods* - \$55,871.16 (\$57,438.75 \$59,004.08)

Department of Medicine

Professor PJ Barter, Dr MA Clay, Dr K-A Rye and Dr P Clifton: *Inhibition of adhesion molecule expression by high density lipoproteins* - \$112,293.91 (\$113,859.24 \$115,426.83 / \$116,992.16 / \$116,992.16)

Professor M Horowitz, Professor J Dent & Dr W-M Sun: *Gastric motility and blood glucose control in diabetes mellitus* - \$88,427.68 (\$90,529.83 \$92,899.25)

Professor JD Horowitz, Dr YY Chirkov, Professor IS De La Lande and Dr P Mohan: *Mechanisms of effects of organic nitrates in vasculature, platelets and myocardium* - \$105,746.91 (\$107,555.83 \$109,362.50)

Department of Obstetrics and Gynaecology

Associate Professor RJ Norman, Dr A Dharmarajan, Dr S Maddocks (Animal Sciences) and Dr SA Robertson: *Colony stimulating Factors in ovulation and luteal function* - \$60,866.24 (\$62,433.83 \$63,999.16)

Dr SA Robertson, Dr RF Seamark & Professor JS Robinson: *Seminal plasma and sperm as determinants of the maternal immune response to pregnancy* - \$61,073.30 (\$63,001.77 \$64,930.24)

Department of Pathology

Dr EG Cleary and Dr JS Kumaratilake: *Analysis of dermal responses, in human and mouse skin, to defined ultraviolet irradiation* - \$89,159.03 (\$89,963.12 \$90,767.21)

Department of Surgery

Dr DI Watson, Dr PJ Hewett, Dr A Rofe and Professor GJ Maddern: *Investigation of tumour metastasis and dissemination during laparoscopic surgery* - \$61,073.30 (\$63,001.77 \$64,930.24)

DIVISION OF SCIENCE

Department of Biochemistry

Dr S Dalton: *The role of cyclin-dependent kinases in control of DNA replication* - \$55,363.16 (\$56,930.75 \$58,496.08)

Dr ML Whitelaw: *Cloning and Analysis of*

bHLH/PAS Factors: Roles in Development and Down Syndrome - \$55,566.36 (\$57,133.95 \$58,699.28)

Department of Genetics

Dr HE Richardson and Prof RB Saint: *Transcriptional control of the G1 to S phase transition* - \$68,023.34 (\$70,353.30 \$72,684.38)

Department of Microbiology and Immunology

Dr A Focareta: *Activation and secretion of the filamentous haemagglutinin of *Bordetella pertussis** - \$45,937.96 (\$47,865.30 \$49,793.77)

Professor PA Manning: *Molecular analysis of pathogenesis in *Vibrio cholerae** - \$121,351.52 (\$124,726.90 \$128,098.91)

Assoc Professor G Mayrhofer and Assoc Professor LG Cleland: *Function and fate of recruited T lymphoblasts in experimentally-induced polyarthritis* - \$92,027.27 (\$94,127.16 \$94,931.25)

Department of Physiology

Professor IC McMillen, Dr JA Owens & Professor JS Robinson (Obstetrics & Gynaecology): *NPY and the control of ACTH secretion before birth* - \$53,839.16 (\$55,406.75 \$56,972.08)

Dr JA Owens and Professor JS Robinson (Obstetrics & Gynaecology): *Insulin-like growth factors and fetal and placental growth* - \$106,907.74 (\$110,763.55 \$114,259.60)

PUBLIC HEALTH RESEARCH PROJECT GRANTS

DIVISION OF HEALTH SCIENCES

Department of Community Medicine

Dr DL Pisaniello and Dr RT Gun: *Community air pollution arising from car spray painting workshops—emissions and exposures* - \$39,556.49

EQUIPMENT GRANTS

DIVISION OF MEDICINE

Department of Clinical and Experimental Pharmacology

Dr P Burcham: *Electrophoresis documentation and analysis system* - \$10,000

DIVISION OF SCIENCE

Department of Microbiology and Immunology

Professor PA Manning and Dr R Morona: *Tissue culture microscope with stage*

incubator and time lapse video - \$30,000

Department of Physiology

Dr JA Owens, Prof JS Robinson (Obstetrics and Gynaecology), Prof IC McMillen and Dr P Steele: *Radiometer 520, Blood gases and co-oximetry analyser* - \$41,000

FELLOWSHIPS

DIVISION OF MEDICINE

Department of Obstetrics and Gynaecology

Dr M Makrides (Australian Applied Health Sciences Fellowship): *Iron supplementation during pregnancy: effects on maternal and child health*

Dr SA Robertson (R Douglas Wright Fellowship Award): *Leukocyte Networks in Early Mammalian Pregnancy*

DIVISION OF SCIENCE

Department of Physiology

Dr KL Gafford (Australian Postdoctoral Research Fellowship): *Restriction of fetal growth alters endocrine control of postnatal growth*

NHMRC SCHOLARSHIPS

DIVISION OF HEALTH SCIENCES

Department of Clinical and Experimental Pharmacology

Mr D Foster (Dora Lush Postgraduate Scholarship): *Metabolism and Disposition of Methadone in a Methadone Maintenance Population*

Department of Dentistry

Mr D Brennan (PHRDC Postgraduate Scholarship): *Factors Influencing Service Provision*

Department of Medicine

Mr P Coates (NHMRC Medical Scholarship): *Role of IL-12 p40 in Transplantation and Use in a Gene Therapy Strategy*

NATIONAL HEART FOUNDATION

GRANT-IN-AID

DIVISION OF HEALTH SCIENCES

Department of Pathology

Dr MA Gibson and Dr EG Cleary: *Defining genetic mutations and their phenotypic consequences in patients with 'atypical' marfan syndrome* - \$47,855 (\$46,658)

View from behind the mask

In September, University of Adelaide Drama student Jodie Edwards fascinated her fellow students when she presented a lunchtime performance of the Indonesian masked dance style known as Tari Topeng Cirebon.

Ms Edwards has now just completed her Honours year, and the core of her thesis for Honours was an analysis of her experience in Indonesia as a student of this unique form of performance art. She wrote this account for the *Adelaidean*.

My first travel experience outside of Australia took place when I was fifteen years old. Bali was the destination of our family holiday where I soaked up the sun, sights and sounds of a culture completely different from my own. Days were filled with sightseeing and adventure while nights offered performances showcasing the artistic culture of these people.

As a dancer from a young age, I was immediately drawn to the dramatic and dynamic dance style of the Balinese people. I could watch these highly decorated artists perform the ancient rituals for hours, following every delicate hand movement, bird-like eye twitch and skyward arched toe. The dance choreography fascinated me and upon being asked to join the dancers one night at the end of a tourist performance, I could feel the beating rhythm from within just as blood is pulsed through veins by the heart. It was after this performance that I informed my parents of my intention to return to Indonesia and study traditional dance.

The twists and turns of what some people refer to as "fate" did in fact allow me to fulfil my dream. In 1993 I was selected by the Indonesian Government Department for Education and Culture to receive a scholarship enabling me to study traditional Indonesian dance, drama and music at the Akademi Seni Tari Indonesia (ASTI) Bandung, West Java; an institute for performance art.

Initially this scholarship was for one year. However, impressed by the progress I made in my studies during the semesters, the Department for Education and Culture awarded me a further year-long scholarship that eventually extended to almost two years.

In total, I studied for almost three years in Indonesia at the Akademi Seni Tari Indonesia (ASTI) Bandung, and the Sekolah Tinggi Seni Indonesia (STSI) Denpasar. Support from the Ian Potter Foundation and the Department for the Arts and Cultural Development in South Australia further assisted me to complete this rich learning experience.

During the early days at ASTI Bandung I found it difficult to decide which performance art style to specialise in; there were so many wonderful dance, music and drama styles from which to choose. To gain to the full I attended as many classes as possible. At last I was learning movements that were the foundations for the amazing dances I had seen in performance. I was beginning to decipher the codes of interlocking melodies that formed the songs of the Gamelan orchestra. Traditional stories dating back to the introduction of Hinduism to Indonesia at last began to make sense.

After a couple of months at ASTI I was informed that the examination performance by the final year students was going to take place that evening. In retrospect, it was this performance that changed completely my field of interest. I vividly remember trickles of sweat running down my back while I was sitting in the upstairs section of the auditorium. On rough wooden steps with thick smoke from clove cigarettes hanging over our heads and the unmistakable crack of peanut shells being nibbled by excited mouths, I was high above the orderly invited audience members seated below. The music began for a dance and seemed unlike any other I had heard before. Asking my friend which dance was to be performed, my limited language skills again let me down and I was no further enlightened to learn it was "Tari Topeng Cirebon".

The music seemed to reach a peak as the dancer, sitting along on the stage, back to the audience motionless with her head and arms resting against a large wooden crate on the floor, suddenly stood up. She strutted around eyeing the audience and flicking a waist scarf behind her, similar to a cat flicking its tail when guarding its territory. Dance movements began to form an intricate pattern. However, the dancer seemed strangely distant, as if it was her body moving without instruction from the brain. I stared, entranced by this unusual composition, wondering where the dance was leading. Ten minutes later I was quite startled.

The dancer moved towards a box and removed an object from within. She continued to grasp the object in her hand while pacing about the stage seeming to ensure the audience knew the importance of this object. From my lofty seat it was difficult to recognise what it was she was holding. It seemed to be a piece of cloth. As the music became softer she stood, feet planted in a wide stance, and brought the cloth up obscuring her face from the audience. There was a pause and in that instant the cloth was yanked away to reveal a pale face staring out at the audience.

Slowly the face peered from left to right and then, giggling shyly, began to move around the stage as a child would if suddenly caught in the spotlight. I was transfixed. The dancer was wearing a mask and the character being presented was "Pamindo", the young child. It was not until the next day that I discovered the meaning of "Tari Topeng Cirebon". Translated it meant the Mask Dances of Cirebon, a district located on the northern coast of West Java.

After negotiations with the head of the dance faculty at ASTI Bandung it was decided that I would be able to specialise in Tari Topeng Cirebon. However, as classes to study the dances of this style were not offered during the current semester, and due to my limited time, private classes were arranged with the teachers who specialised in the Tari Topeng Cirebon dances. I was fortunate enough also to have a teacher who was interested in passing on knowledge and facts on the theory and historical background of these dances, so beginning my research on Tari Topeng Cirebon.

I became a regular member of the research teams consisting of lecturers from ASTI Bandung who went on surveys and study tours to the outlying villages of Cirebon to record as much information as possible on the indigenous art form of Tari Topeng Cirebon, a government-based initiative to preserve indigenous performance art. I often assisted by videotaping live performances held in the village by elderly "dalangs" (dancers of this performance style).

These trips provided me with unique opportunities to gain insight from practitioners of this masked dance style, created originally as a tool to assist in the spreading of Islam in Indonesia. I was able to attend ceremonies and rituals where performance of Tari Topeng Cirebon played an important role in the beliefs of a community.

The atmosphere of a Topeng performance is always exciting and unique regardless of whether the performance is in the village for a traditional ceremony, or in a theatre purely for entertainment. The performance may



Jodie Edwards performs the dance of Klana. "Klana is old and short tempered, arrogant and wrathful while full of anger and lust. His emotions are uncontrollable, swinging from one extreme to the other as he paces around the stage watched, often fearfully, by the audience. This dance takes much spiritual preparation, physical strength and stamina. It is considered to be the dramatic climax in the sequence of dances." Photo: David Hart, Drama.

occur indoor or outdoor depending on the circumstance of the event. A performance in a village adheres to a traditional format which has great religious and spiritual value when performed. Dances that are performed in the theatre, or for entertainment purposes, are often condensed versions.

Often Southeast Asian performance art seems to Western society nothing more than an "oriental" oddity, presented out of context with little introduction for audiences to grasp the essence. Tari Topeng Cirebon is unique to Indonesia and possesses a great deal of symbolism, with an emphasis on the "types" of characters presented rather than the overall story. The dances are considered to be cyclic, and represent the life cycle of humans.

The learning process of Tari Topeng Cirebon has been the

focus of my Honours Drama thesis. I have examined the way in which this art form is transmitted from one generation to the next via the "handed down" (oral) tradition of teaching. To gain a thorough understanding of Tari Topeng Cirebon it was essential I experienced both traditional (village) and formalised (institution) learning programs.

During the three years I lived in Indonesia I was given the opportunity to join a performance troupe and regularly presented various mask dances of the Tari Topeng Cirebon dance sequence for audiences throughout Java and Bali. Since my return to Australia I have performed at schools and universities throughout Adelaide, unveiling the mask and further revealing the unique aspects of Indonesian artistic culture.

— Jodie Edwards

5UV NEWS

• Like many areas of the University, 5UV has been asked to operate on a reduction in University support from next year. In our case, the reduction is to be 33%, and follows a three year period where our allocation was reduced by a factor of three.

In that time, despite the cuts, the station has been able to maintain the quality of its programming, winning a number of national and international awards. We have also developed our training structure, maintained the quest for conversion to FM, used new tech-

nologies in innovative ways and been a significant contributor to the University's community service objectives. It will be very difficult to maintain these services.

• 5UV's summer Program Guide will be available next week. Call the station on 8303 5000 for a complimentary copy.

• The recent speech given at the University by Minister for Education, Employment, Training and Youth Affairs, Amanda Vanstone, can be heard on "On Campus" on Friday 6 December at 6pm (repeat 7 December at 2pm).

— Jeff Langdon

Advertisement

Ben's appeal for help from staff

Advertisement

A University of Adelaide staff member is appealing for help to save his family from a disease-ridden and war-torn refugee camp in Uganda.

Many staff, students and visitors to the University of Adelaide would know Mr Ben Yengi, who is the Community Relations Officer at the Thebarton Campus.

Ben's family has suffered greatly during the civil war in Sudan, which has raged for more than a decade.

Since 1989 many of his close family members have been forced to live in the Adjumani Refugee Camp in northern Uganda.

Ben's father, brother, sister-in-law, niece and eight cousins have all died amid the camp's dreadful conditions.

Fearful for the safety of the rest of his family, including his brother

Stephen, Ben is working to secure their passage to Australia – but it will cost almost \$16,000.

The Thebarton Campus has rallied around Ben, holding a fundraising event at the Einstein's bar.

He is now appealing to the generosity of all University of Adelaide staff and students, and the public, to help rescue his family from the refugee camp.

All donations will go towards air fare and associated travel costs – any donation above \$2 will be tax deductible.

Donations can be made to the Australian Refugee Association, 2 Brown Street, West Croydon, SA 5008. Phone (08) 8340 4700 for more details.

—David Ellis

CLIMATE SURVEY RESULTS

As promised in a letter from the Vice-Chancellor on 7 June 1996, every staff member who was given the opportunity to participate in the Climate Survey is now being provided with a summary of results through personal mail-out, and information is also being made available through the *Adelaidean*. In addition to results summaries, I have included some information about the process to be adopted in disseminating the results, interpreting the data and making decisions about actions which will be taken in response to the key issues. There are two clusters of issues which stand out. The first is a marked absence of "customer focus" in the factors staff see as important; and the second is associated with internal communications and management processes.

The consultants, Rodski and Falls, have provided detailed reports, from which this summary data has been taken. As you may recall the survey consisted of 50 factors. For each factor we asked the following questions; and asked respondents to rate their views on a scale of 1-7.

- How important is this factor from your point of view?
- How well are we performing in relation to this factor?

WHAT DID YOU SAY?

The first table shows the 10 highest ranked **IMPORTANCE** factors for the University as a whole.

Rank	Factor
1	My job satisfaction
2	Having supervisors who listen to staff
3	My job security
4	Co-operation between staff
5	General work atmosphere
6	Involving me in the development of plans in my work area
7	Teamwork in my work area
8	Adequate opportunity to communicate with supervisor/manager/head
9	Trust in the workplace
10	Knowing how I am going at my job

These responses reflect an organisation in which its staff place a high priority on working in an environment which fosters open and honest channels of communication and cooperative work practices which enable the individual to attain an adequate level of job satisfaction. This is in contrast to high performing organisations in which staff perceive high quality services for its client groups as the most critical issues for the organisation's success.

The second table shows the 10 highest ranked **PERFORMANCE** factors for the University as a whole. These are the areas in which you said your area or the University is performing well.

Rank	Factor
1	Safe workplace
2*	Adequate opportunity to communicate with supervisor/manager/head
3	Productivity
4*	Teamwork in my area
5*	Having supervisors who listen to staff
6	Quality of the University's "products & services"
7	"Internal customer" satisfaction
8	Responding to "customers" needs
9	Pride in The University of Adelaide
10*	Involving me in the development of plans in my work area

Those marked with * indicate factors which are also listed within the top 10 **IMPORTANCE** factors. Although the perception by the staff is that the University performs well in some "people" issues, we may need to explore the perception of low performance in terms of "external customer satisfaction".

The third table shows the top 15 factors which staff believe need to be **IMPROVED** across the University as a whole. These factors have been derived by calculating the gap between the respective **IMPORTANCE** and **PERFORMANCE** scores for each factor.

Rank	Factor
1	Opportunity for advancement
2	Staff being listened to by the Senior Management Group
3	Confidence in the Senior Management Group
4	Communication within the organisation
5	Staff having clearly defined career paths
6**	Trust in the workplace
7	Recognition by local management of staff efforts
8	My pay
9**	My job security
10**	My job satisfaction
11**	General work atmosphere
12	Speed in decision making
13**	Co-operation between staff
14**	Knowing how I am going at my job
15	Quality of the University's systems and processes

Factors marked with ** are also included in the top 10 **IMPORTANCE** rankings. Given the factors which show the highest improvement gap, staff believe that issues concerning leadership, staff development, performance management, wellbeing and morale, and communication are areas requiring consideration.

BENCHMARKING DATA

You will recall that through our association with the Australian Quality Council we have used a survey instrument which measures staff perceptions in relation to core factors common to a wide range of organisations. We are able to provide comparisons with both the national network of 102 organisations and the South Australian network of 6 organisations.

To generate this comparative data, the University's performance, as assessed by the staff who responded, is ranked within the range of responses from other organisations. The quality criteria measured by the survey covered the following categories:-

Senior Leadership, Local Leadership, Policy and Planning, Information and Analysis, Staff Development, Empowerment, Wellbeing and Morale, Communication, Performance Management, Customer Focus, Quality of processes, products and services, and Organisational Performance.

Compared to the performance of organisations in the national network, the University rated above "average" in only two areas - Policy and Planning and Empowerment. In the much smaller network in South Australia the University's performance was below the "average" against all 12 criteria.

PROCESS

I have already been briefed by the consultants and my Reference Group on the interpretation of the data and possible response strategies. Before Christmas and again in the New Year the Senior Management Group will schedule sessions in which it will discuss the results and identify both the key issues and a range of actions which can be taken at various levels within the University. At this stage the detailed faculty, department, branch and unit data will be disseminated through Division Heads and portfolio managers.

I suspect that the Senior Management Group will need to seek further input from staff to assist in making the right decision about corrective action, and it is intended that future planning cycles will incorporate information from the survey. As previously explained to staff, the Senior Management Group acknowledges that these are major issues and realises that it will take time and effort to improve the climate at work, but we are committed to doing so. Further information will be conveyed to you as the Senior Management Group discusses the way forward.

I thank you for your willingness to provide feedback through this survey.

MARY O'KANE
Vice-Chancellor

20 November 1996

Full House signs up for third time

An illustrated lecture on "Mars and its Meteorites" was presented by Associate Professor Vic Gostin to a capacity audience in the Mawson Lecture Theatre on Friday 15 November.

Dr Gostin teaches in the Department of Geology and Geophysics, and is recognised Australia-wide as an authority on the geology of the "red planet".

This was the third (and last) of the Science and Mathematical Sciences Chapter's 1996 Public Lecture Series. This year's series also featured Professor Mike Tyler (Zoology) and Professor Peter Rathjen (Biochemistry). On each occasion, the lectures were booked out in advance.

"More than 1500 people have been brought into the University this year by the Chapter's Public Lecture Series to hear about University of Adelaide achievements in the Sciences," said Alumni Activities Coordinator Adrienne Eccles.

"A similar number was brought in by the 1995 series, and the Chapter intends to repeat this success next year."

Details of next year's Public Lecture Series will be announced in the new year.

A personal view of SA history

The recently established Barr Smith Press at the University of Adelaide has two special publications available for sale, which would make an ideal Christmas present for those with an interest in South Australia's social history.

They are Fayette Gosse's edition of the letters of Joanna and Robert Barr Smith, and Philip Butters's edition of the poems and recollections of Fidelia Hill.

Joanna and Robert: the Barr Smiths' Life in Letters, 1853-1919 was the first publication of the Barr Smith Press — appropriately, given the enormous contribution of Joanna and Robert to the University, including the magnificent Barr Smith Library itself.

The letters offer a fascinating insight into the social and economic life of Adelaide and South Australia during the period covered. Their comments on local politics and other happenings in the growing and developing colony put history into a personal perspective of interested and contributing individuals.

Fayette Gosse is a graduate of Adelaide University's English Department who has also written a study of the Gosse family, among other books. *Joanna and Robert* is available for \$37.50 hardbound (\$7.50 postage within Australia).

Fidelia Hill arrived in South Australia on the Buffalo with Governor Hindmarsh at the end of 1836, and was "the first white lady" at the site of Adelaide. She was also the first woman, and the first South Australian, to publish a volume of poetry in Australia. Her *Poems and Recollections of the Past* was originally published in 1840, and is now available in a handsome facsimile edition from the Barr Smith Press.

In her preface, Fidelia Hill notes that the poems were written in the context of "severe domestic calamity" and "singular reverses of fortune". These hardships are discussed by the editor, Dr Philip Butters, who teaches in the English Department.

Fidelia Hill, Poems and Recollections of the Past is available for \$25 hardback, plus \$3 postage (within Australia).

Graduates form virtual company

It began as Indochina Architects, a joint venture between two busy Australian architects, which offered architectural, urban design and interior design services particularly in the historic area of Vietnam.

To help them, they built up an informal network of consultants in Australia — structural engineers, quantity surveyors, landscape architects and the like — connected by the Internet more than by face to face contact.

So when the architects "bit the bullet" and decided to open up offices in Vietnam, it made most sense to formalise this primarily Australian based network, in effect setting up a "virtual company" with an electronically connected regional workforce.

The company, Indochina Consultants, brings together professional design, engineering and surveying

skills. It has an office in Hanoi with a soon-to-be opened office in Ho Chi Minh City. The chairman is Ken Woolley, of Ancher Mortlock & Woolley, and the managing director is John Diekman (BE 67, BArch 70), of Diekman + Associates. Both are co-directors of Indochina Architects.

"Sophisticated computer-based technology allows the 'sharp end' of business to be on the ground in Asia, while the 'back room' work is done in Australia," Diekman says. "Nowadays, clients are based around the world. Our project sites may be anywhere in Asia, and the project team could be in different parts of Australia and Vietnam."

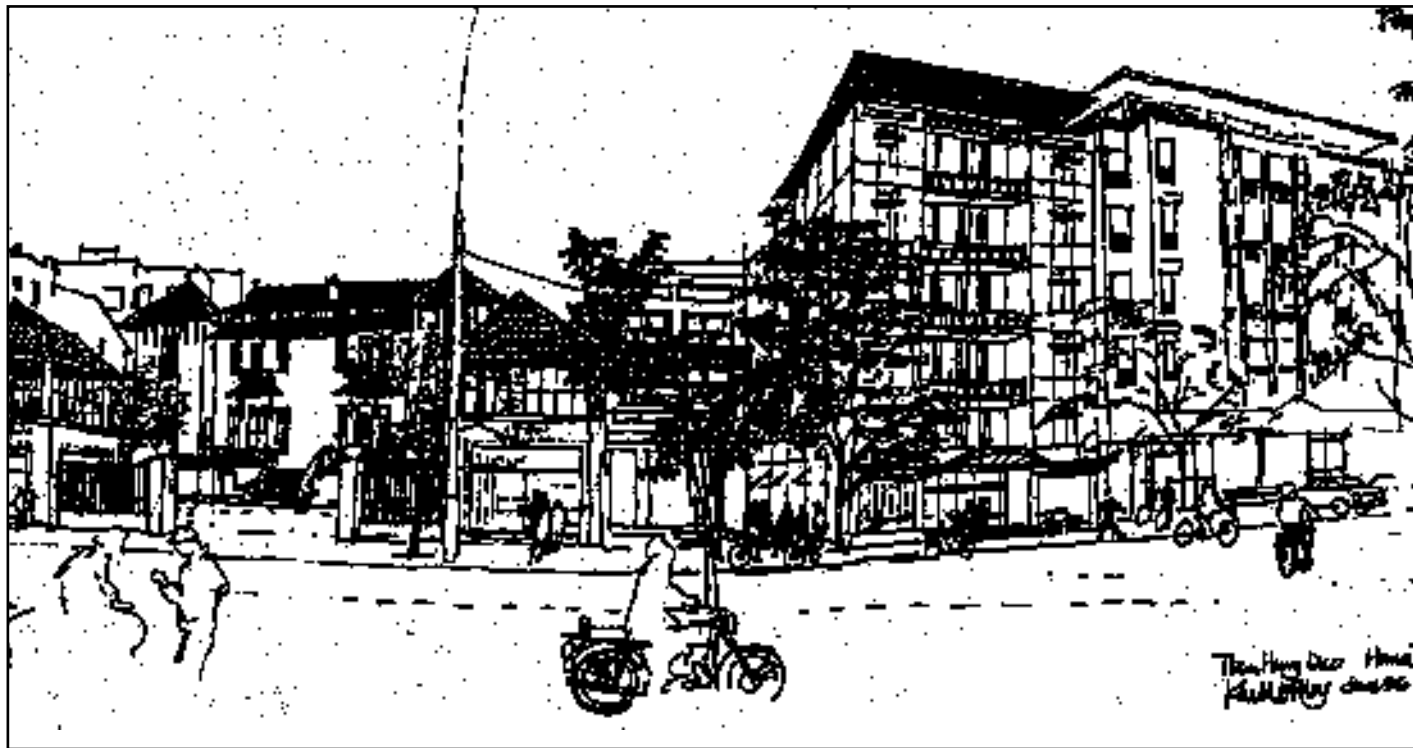
The company so far has received an AusIndustry Grant, which went toward developing a business marketing plan, and an AusHeritage Grant to write a report on ways to develop the French Quarter in Hanoi

while also protecting its colonial heritage. A plan is on the table for a site that includes a French villa, though nothing has been commissioned yet, Diekman says.

Anticipating much up-front investment before the work flows in, Diekman admits that it sometimes seems as if you are only earning "virtual money". Nevertheless, he remains optimistic. "We're starting to get work from the expatriate Vietnamese community in Australia too. There's a snowball effect."

Reproduced with permission from an article by Deborah Singerman in SPEC News, July 1996. Tel: 02 9923 1499.

The sketch below by Ken Woolley is of Tran Hung Dao, a long avenue running to the railway station in the French Colonial area of Hanoi. It was provided by John Diekman.



Florey Chapter reports successful year

The Annual General Meeting of the Florey Medical Chapter took place during the "Medical Vignerons Luncheon" at Lirra Lirra Cafe (Waite Campus) on Sunday 27 October 1996.

Chapter Chair Dr David Game reported on the Chapter's activities in the past year. These included The Florey Exhibition in the SA Museum from October 1995 until May 1996 (during which time

approximately 350,000 people visited the museum) after which it went to the Museum of Victoria in Melbourne for two months (where some 40,000 people saw it). Dr Richard Brock was warmly thanked for his tireless efforts in staging the Exhibition.

The "Music & Madness" luncheon held in conjunction with the Cornell (Arts/Performing Arts) Chapter had also proved an outstanding success thanks to the painstaking work by

Elizabeth Silsbury and the combined committee.

Secretary/Treasurer Dr Richard Brock presented the financial report.

Drs Hunter and Brock retired from the Committee but Dr Brock is continuing on work associated with the Florey Exhibition. Drs Alan Gale, Don Handley, Des Dineen and Alex Burrige agreed to join the Chapter Committee.

Professor Jim Watts

was guest speaker and described the ways in which he and his family had become involved in wine making.

He spoke also of several early Australian vigneroners who were medical practitioners, referring to two South Australians in particular, Dr Penfold and Dr Angove — both of whom were of the opinion that wine had some medicinal value.

Professor Watts quoted from the recent research article in the BMJ about the health-giving properties of wine in moderation.

Wines tasted pre-lunch and served during the luncheon included a selection of Fox Creek Wines (Professor Jim Watts), Hillstowe Wines (Dr Chris Laurie) and Barratt Wines (Dr Lindsay Barratt).

After the lunch and meeting members and their guests were able to visit the Urrbrae exhibition of Botanical Art and the rose garden.

New Chair for Cornell Chapter

The Cornell Chapter elected Mr Tim Mares as its new Chairman at the Annual General Meeting held at St Mark's College on 14 November last.

Founding Chairman Professor Brian Coghlan stepped down from the position after heading the Chapter since 1992.

In his Chairman's Report, Professor Coghlan remarked, "I think there should be a fresh set of ideas every few years. Time for someone else to have a go." Professor Coghlan remains as a member of the Committee.

Other Committee members elected were Ms Rae Blesing, Mrs Joan Charlesworth, and Mr John Edge.

Mrs Decie Denholm, the Alumni Trustee for Arts, and Mrs Elizabeth Silsbury, the Alumni Trustee for Performing Arts, remain members *ex officio*, as do the Deans of the two Faculties.

The Cornell Chapter will announce its program for 1997 in the New Year.

—Adrienne Eccles

Project office marks start of Lower Level redevelopment

The long-awaited redevelopment of the University's Lower Level has now acquired a tangible reality with the erection of its project office — a set of transportable buildings on the lawns between Union Hall and the Maths Building.

They will be home for eight staff from the Projects Division of the Property Services Branch, who have moved out of the basement of the Old Classics Wing. The Division's John Larwood is Project Manager for the Lower Level redevelopment.

The four-year project involves the demolition of the Fisher Building and the construction of two new buildings for the Divisions of Science and Engineering & Mathematical Sciences.

After many weeks of analysis and consultation with a wide range of user groups affected by the redevelopment, the Project Team and the two Divisions have agreed to stage the complex process in the following sequence:

lowing sequence:

- relocate personnel within the Fisher Building (including undergraduate teaching to the Jordan Laboratories)
- upgrade Union Hall as a temporary lecture theatre
- demolish the northern end of the Fisher Building (including the Fisher Lecture Theatre)
- build the new Science Building in one stage
- build Phase I of the new Engineering/Maths building (computing suites and lecture theatre)
- move occupants of southern end of Fisher Building to New Science Building and demolish rest of Fisher Building
- Build Phase II of the new Engineering/Maths building
- refurbish the Benham Laboratories.

John Larwood said that demolition of the first two bays of the Fisher Building

was expected to begin in July next year, with the first stage of the Engineering/Maths Building completed in mid-1998 and the New Science Building by mid-1999.

The whole project should be finished in late 2000.

John Larwood stressed that the upgrading of Union Hall to fill a shortage of lecture theatre space for the next few years would not compromise its viability as a performing arts space.

"We will organise the timing of lectures so that it will still be possible for people to book the theatre for evening performances, and have sufficient time for access to the stage and backstage areas before performances," he said.

The redevelopment will also involve the loss of some car parking spaces on the lower level. However, John Larwood said this would be balanced by space becoming available in the new Frome Street carpark when that is



Project Manager John Larwood on site, with the Fisher Building in the background. Photo: David Ellis

completed in early 1997.

All enquiries about the Lower Level project should be directed to the new project

office: John Larwood (34244), or the Deputy Project Manager Rob Hutson (34246).

—John Edge

ACCOMMODATION

ALDINGA BEACH: Holiday house for rental, near esplanade. 2br, balcony, sea views. Ph Jo 8431 2147.

BRIGHTON: Excellent opportunities exist for enthusiastic students from a variety of depts to live in a small highly creative environment. The offer is for accommodation at a competitive price with photocopier, fax, tv, phone & washing facilities & easy parking available. Ideal applicants will have at least 1/2 year uni experience & enjoy graphic design & architecture in the environment. An occupant is sought for the period of 1-2 years depending on the academic development of the applicant. Applications in strictest confidence to David Moore, Moore Design, 39 Lewis St, Brighton SA 5048. Ph 8296 3601, fax 8358 2230.

HENLEY BEACH: Beachfront unit for rent. Lge living area with wonderful views. 2 br, 2nd rm small. Flexible lease from 3 mths to 12 mths, rent varies accordingly. Ph Sandy 8212 7226 (w), 8352 3450 (h).

MAGILL: 1 rm in 2 br house. Close to transport & shops. Prefer studios, quiet student who doesn't need tv for life support. Non smoker prefer. Newly decorated, fantastic house, furn, air cond. Huge courtyard in quiet area. 1 cat. \$67.50 pw + \$250 bond. Ph Kathryn 8365 7537.

NAIRNE: Adelaide Hills. Avail mid Dec. Close to transport & shops. 1-2 br passive solar mudbrick house. Wood heater, raked ceilings, mezzanine. Adjoining farmlands, quiet location, garden with fruit trees. \$120 pw + 4 wks bond. Ph 8353 6018 (h), 8303 4486 (w).

NAIRNE: Near Mt Barker.

Avail from 2 Dec. Close to shops/transport. Passive solar design mud brick house on town boundary. Suit 1 person/couple. Open plan with mezzanine level. \$115 pw + \$230 bond. Ph Simon 8388 6268.

NETLEY: Granny flat, 268 Marion Rd. 3 buses to city. Completely separate electricity & phone. Fully furn. \$52 pw + 3 wks bond. Ph Mr Fisheris 8293 7901.

NORTH ADELAIDE: 1 br flat, pool, garden. \$110 pw incl gas & elect. Ph 8267 1081.

NORTH ADELAIDE: 2 br full furn flat, lge drawing rm, sep dining rm, pool, garden. \$280 pw incl gas & elect. Ph 8267 1081.

PARKSIDE: 1 female required to share attractive house with 2 females. \$60 pw + bond. Ph 8373 5962, ask for Felicity or Jenny.

ROSTREVOR: 2-3 br home, rc aircon, carport. Pleasant location, suit quiet couple. No dogs. \$150 pw. Ph Wendy 8222 5635 or page 8378 1111 (No.17501) or 8336 2117 (ah).

STONYFELL: 3 br, fully furn house in leafy, quiet street. Air cond, in-ground pool. Bus route to city nearby. Avail Mar & Apr '97. Longer rental neg. Has proven to be excellent accomm for visiting academics on previous occasions. Ph Debra 8204 7619 or email agillesp@medicine.adelaide.edu.au

UNLEY PARK: A non smoker to share lovely 2 br furn unit with female academic. Excellent location in quiet leafy street, close to shops & transport. \$65 pw + exp. Avail now. Ph 8201 3946 or 8373 6228 ah.

WANTED: Furn flat/townhouse/unit close to city for 6 week period early Jan - mid Feb '97, for single professional. Ph Australian String Quartet 8303 3748.

Adelaidean

CLASSIFIED

WANTED: Long term accom sought near city or Glenelg, 1-2 br. Minimum courtyard required (have dog). Please call Jennifer 8302 1700.

WANTED

HOUSE SITTER: Needed from mid December to early Feb. Lge house in Mile End, garden, no pets. Nominal rent. Ph Sandy 8352 3450 (h), 8212 7226 (w).

HOUSE SITTER: Seacombe Gardens. 10 mins beach & Flinders. From 25/11/96 - Feb '97. Recently painted weatherboard house, air cond, bathroom (renovated), lge yard, cat (Spook) to feed. Ph Charles 018 803 867.

HOUSE SITTING: Single professional, refs, seeks long term house sitting, 6-8 mths from Jan '97. Ph Margaret 8278 5365.

PROMOTIONS TYPE PEOPLE: 'Club Life. Be in it' has immediate vacancies for 5 promotional officers (casual part time) to service the employees of their corp clients by way of staffing of displays & info booths. Remuneration by way of an hourly rate with incentives. If your fit, healthy, have a great sense of humour and v/good at the smiling thing... call John Wendt 8364 0212.

FOR SALE

ALPACAS: Outstanding selection of pregnant females and stud males. Wethers suitable for fibre and as pets from \$750. Experienced management and agistment available for clients without land or farm-

ing experience. Enquiries welcome. Ph John or Kathy Holzberger 8380 5454.

BICYCLE: 20", cruiser style, suit child age 7-9. Black with green trim. Single spd, front hand brake. Exc cond. \$85. Ph Brian 8303 5340/8370 2564.

COMPUTER SOFTWARE: Microsoft EXCEL for windows 1995, new, unopened. \$145. Ph Alex 8356 3925.

DAIHATSU CHARADE: 1982, white, 5 spd, man, 5 door. Exc cond. UFL 631. \$2,800 ono. Ph 8352 1155.

FORD FALCON UTE: 1986 XF ute; white, tan duco, air cond, LPG/petrol, tow bar, new tonneau cover, removable canvas/aluminium frame canopy for camping/tradespeople, only 124,000 km, exc original cond, 5 mths rego. UTW 186. \$10,500. Ph Leonie 8204 6328 or 8276 8680 (ah).

GOLDEN COCKER SPANIEL: Female, not desexed. 3 yrs. Good with children. Suit active family. \$150. Ph 8391 2475.

HOLDEN CALAIS: White VN V8 with many options. Car avail soon from deceased estate. Only 43,000 kms. SA36-259. Enquiries to Peter Harley ext 34036 or ah 8332 0517.

HOUSE: Mt Barker. Lge 4br home on approx 1/4 acre. Spacious living areas, lge well equip kitchen with walk in pantry, wall oven & lge serving bench. 3 way bathroom, car port under main roof, established gardens with encl b/yard. Quiet cul-de-sac, close to all fac & Waldorf School. \$129,500 ono. Ph 8391 2475.

LAB EQUIPMENT: Spectra Physics - High Pressure,

Liquid Chromatograph, UV/Visible Detector, and Auto Sampler and PERKIN ELMER - Atomic Absorption Spectrophotometer. Best offers. Ph Alex 8356 3925.

MISC: Climbing rope (Edelrid 9mmx45m, unused) \$100; climbing harness ("Whillans", large, little used) \$50; crampons (Salewa adjustable size 2, used) \$40; pack (Karrimor Alpiniste 3, used) \$40. Ph Murray Hamilton ext 35322 or email mwh@physics.adelaide.edu.au

MITSUBISHI SIGMA: 1984, white, auto, air cond, pwr steering, radio/cass, recond engine & diff, exc cond. VLV 196. \$2,800 ono. Ph 8338 4152, 8303 3283.

NISSAN MICRA: 1995 LX, silver, 9,000 km, immac cond, under factory warranty. VTZ 735. \$13,000 ono (Nissan Micra RAA Best Family Car Under \$25,000). Ph 8201 3852 or 8293 1158 (ah).

SOFA BED: Neutral tones. \$300. Ph 8277 4575 or ext 35172.

TORANA SUNBIRD 79: 4 cyl, auto sedan, 2.0 L, white. New front tyres/rear brakes. Runs ok. VCZ 352. Ph 8276 8385

DEPARTMENTAL

DENNING COACH: 1972 (45 reclining cloth seats), 310,000 total odometer, Detroit 6/71 diesel engine, 5 spd Spicer constant mesh gearbox, single rear axle, air cond, roof bar, current certificate, rego to 28/02/97, Recently undergone extensive overhaul and in excellent mech cond. RAC 233. Enquiries/inspection contact Transport Officer 8303 7892 or fax 8303 7961. Tenders marked 96/09 to: Manager, Property Services, Roseworthy Campus, Roseworthy, SA, 5371.

Tenders close Mon 16/12/96, 5pm. Vehicle not avail for delivery until Mon 6/01/97. Neither the highest nor any tender necessarily accepted. RAC 233.

MOLNAR HOIST: For sale, 3 tonne, two post automotive hoist. Enquiries to Mr B Fehlberg, Plant Science, ph 8303 7291. Tenders in sealed envelope to B Fehlberg, Plant Science, Waite Campus by 5 pm, Fri, 6/12/96.

SUBARU LIBERTY LX: 4WD Station wagon 1995, white, 40,000 kms, air cond. VSL 621. Inspect by appointment at Roseworthy Campus, Keith Cowley, 8303 7814. Tenders in sealed envelope marked ESM3/96 to the Laboratory Manager, ES & M Dept, Roseworthy Campus by 5 pm, Mon, 9/12/96.

MISCELLANEOUS

ACADEMIC WORDPROCESSING: \$2.50 per page, after hours service, WP on disk-professional formatting. Resumes: CVs. Ph Anne Every 8212 6869 or 8415 7866, fax 8212 6662.

BRIGHTON: Design Business has space - period, H.I.A. listed house, in Brighton. Use of courtyard, boardroom, fax, photocopier, phone, library, kitchen, etc. Easy parking. 2 rooms available. \$380 per month. Ph M.D. 8296 3601.

HOUSE CLEANING: Now is the time to do something about getting your house in order before Christmas. Only \$25 for an "Introductory Clean" on the average three bedroom home. North Adelaide & Eastern Suburbs only. Ph Louise or Neil on 8363 2663.

OFFICE FOR RENT: King William Rd, Hyde Park, furnished, avail half-time immediately. Ph John 8357 9244.