

LA TROBE UNIVERSITY

Bulletin

JANUARY/FEBRUARY 2003

WILDLIFE

**finds sanctuary
on campus**



**Backing
Australian
excellence**

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Cover: Pied Cormorants and other birds rare to urban Melbourne are re-appearing on the wetlands of La Trobe University's Melbourne Wildlife Sanctuary. An appeal for funds for the Sanctuary is being launched during February, see page 12.

This photo of a Little Pied Cormorant drying his wings after diving for food was taken by David Burren.

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Fire-fighters take over La Trobe University's Beechworth campus during the recent bush fires.

Vice-Chancellor praises staff in fire crisis

La Trobe University's regional campuses were in the thick of the recent bushfire crisis – with the Beechworth campus serving as key operational centre for the Multi-Agency Response Team fighting the fires in north east Victoria.

The Vice-Chancellor, Professor Michael Osborne, praised the superb efforts of La Trobe staff at Beechworth who provided round-the clock support for some 600 fire-fighters and 80 co-ordinators.

He also paid tribute to many members of the University from other campuses, who joined local brigades and worked in other ways to help battle one of the most severe bushfires in Victoria's history.

Professor Osborne said the University's recent upgrading of information technology infrastructure, increasing telephone and data capacity to regional campuses, enabled rapid communication of critical mapping, infra-red imaging and Fire-Web information from Beechworth.

University accommodation and the La Trobe International Hotel School at Beechworth also helped house and feed volunteer and professional fire fighters mobilised to tackle the Eldorado and Stanley fires. The campus' popular summer 'Opera in the Alps' was postponed because of the fires.

Beechworth campus Director, Ian Burke, said the Stanley fire started at Buckland Gap near the University, and came to within a kilometre of the southern boundary of the campus.

He said: 'Major sections of the campus were taken over for command, operations, logistics, resources and ancillary services – such as first aid, counselling and respite-therapy – and as a staging, accommodation and catering centre.'

Maintenance Operations Manager from Bundoora, Robin Young, was seconded to the Beechworth campus to support local staff. 'I was very impressed with the effort everyone put in. People worked long hours and did things they would not normally do – like gardeners serving tea to firefighters!'

Albury-Wodonga information technology staff helped with communication links at Beechworth while other campus members served as volunteer fire-fighters in Victoria and NSW.

At least seven academic and administrative staff from the Bendigo campus, all members of the CFA's Region 2 Strike Teams, helped fight the fires at Bright.

Jeff Pethybridge, from the campus' Desktop Systems Support Group, said each of the three Strike Teams comprised six trucks, each with five people. The teams worked for 12 hours a day on tours of duty that lasted three days. ■



BACKING AUSTRALIA

La Trobe in \$11.5m national 'Centre of Excellence'

Research at La Trobe University to help build highly sophisticated computer models and software will play a key role in one of eight new Centres of Excellence designed to boost Australia's international competitiveness.

The Australian Research Council (ARC) Centres will carry out leading-edge research in national priority areas. They share almost \$90 million over the next five years under the Federal Government \$3 billion 'Backing Australia's Ability' innovation package.

La Trobe is part of the recently announced \$11.5 million ARC Centre of Excellence for Mathematical and Statistical Modelling of Complex Systems, a collaborative research effort involving the University of Melbourne, the Australian National University, the University of New South Wales, and the University of Queensland.

Head of the La Trobe research team, Dr Reinout Quispel, says complex systems are critical to most aspects of modern life and industry – from the internet, robotics and defence, to finance, biology and medicine.

An Associate Professor in the School of Engineering and Mathematical Sciences, he says La Trobe will contribute its expertise in the areas of dynamical systems, in which it has long been a leading player, and scientific computation.

Dynamical systems, he explains, exhibit a wide range of behaviour: from the very predictable, such as the motion of the planets, to very unpredictable, like the weather. 'Research at La Trobe is helping improve our abilities to predict the behaviour of such complex systems.

'In scientific computation it is important to validate approximations made in the



process of modelling scientific systems. Once a consistent model is attained, the crucial second role of scientific computation is the prediction upon which actions or recommendations are based.

'This research is therefore critical, among other things, to the development, analysis, and implementation of the next generation of computer models and software,' he concludes. ■

Research partnership for BETTER ABORIGINAL HEALTH

La Trobe is one of five universities and a group of other organisations to bid successfully for research funds to improve the health of indigenous Australians.

The funds will be used to form the new Cooperative Research Centre for Aboriginal Health (CRAH). It replaces the former Cooperative Research Centre for Aboriginal and Tropical Health, and has a budget of \$145 million over seven years.

The Federal Government has contributed nearly \$23 million and La Trobe will contribute \$100,000 per annum in cash plus the participation of its researchers.

La Trobe joins Flinders, Northern Territory, Melbourne and Queensland universities and 14 other organisations, selected to further transdisciplinary research, into Aboriginal health.

Four La Trobe health academics will contribute to the Centre's research,

focusing on areas which Aboriginal communities and industry partners identify as critical to improving health outcomes for Aboriginal people.

They are Professor Vivian Lin (Head, School of Public Health); Associate Professor Judith Dwyer (Leader, Health Service Management, School of Public Health); Associate Professor David Legge (Senior Lecturer, School of Public Health); and Dr Jon Willis (Research Fellow, La Trobe's Australian Research Centre in Sex, Health and Society).

A new approach by the Centre acknowledges shared recognition between service providers and research organisations of crucial gaps in understanding determinants of Aboriginal health and well-being.

The approach recognises that research on determinants generally requires a longer

Continued page 6

Teaching, research to EXPAND IN MILDURA

La Trobe University, with help from a \$1.9 million Commonwealth government grant, is boosting its information and communications technology (ICT) infrastructure as part of a major development of its Mildura campus this year.

The move will provide regional staff and students with reliable, high-speed communications services, giving them access to state-of-the-art educational and research materials including video streaming of lectures from across the La Trobe University campus network.

The announcement of the new microwave link to Mildura coincided with the official 'turning of the sod' ceremony recently on the site of the University's new Academic Research Building at Mildura.

The ceremony was performed by La Trobe University Chancellor, Emeritus Professor Nancy Millis, right.

The building is scheduled to be completed by August. In addition to funds committed by La Trobe University, the Victorian government has provided \$2.5 million for the new building through its Regional Infrastructure Development Fund.

'The University is delighted to have received such splendid support from both the Commonwealth and the State governments for its work here in Mildura,' Professor Millis said.

Meanwhile, La Trobe Vice-Chancellor, Professor Michael Osborne, said the funding to install the high bandwidth microwave link to Mildura provided an additional impetus for the development of higher education in north-west Victoria.

'It will enable the University to extend the broad range of courses and academic services available on its other regional campuses to Mildura and the Sunraysia-Mallee area.'

He said almost seventy per cent of students on the Mildura campus did not have internet access from their homes, and their only form of web access was via the campus network. The funds will enable student access to internet facilities and local intranets.



'I have a special interest in the building we are launching here today,' La Trobe University Chancellor, Emeritus Professor Nancy Millis, right, told a gathering of about 150 people at Mildura.

Turning the first sod for the new building at a ceremony attended by about 150 people, including well-known Mildura identity and La Trobe Regional Advisory Board Chair, Mr Stefano de Pieri, left, Professor Millis said she had a long association with the Murray Darling Freshwater Research Centre.

'Based first only at Albury-Wodonga, it has been recognised for some time now

that the lower Murray needed research attention. I am delighted that this building is to give the Centre a permanent, purpose-built home. Not only that, but it will be a laboratory to serve the needs of La Trobe biological sciences students.

'Another potential benefit of La Trobe's expanded role in Mildura will flow from opportunities for students to link with the recently proclaimed Mallee reserve by the Trust for Nature and, we hope, with the planned Biosphere, an exciting project of some 80,000 hectares.' ■

The project will comprise a 14-stage microwave link between the Mildura campus (via Echuca, Swan Hill and Ouyen) to one of the existing University microwave towers at Mt Burramboot, between Bendigo and Shepparton, (*see diagram next page*).

From Mt Burramboot, the new link will join the rest of the University's network covering the main Melbourne campus at Bundoora, as well as the campuses at Bendigo, Albury-Wodonga, Shepparton and Beechworth.

The project also includes:

- installing new switching equipment;
- upgrading the speed of the existing

Bendigo-Bundoora Australian Academic Research Network (AARNet) backbone (from 34Mbit to 155Mbit) to allow for the increase in traffic;

- data-point wiring for the new Mildura campus building which includes a 150-seat lecture theatre;
- video conferencing and 20 workstations for the computer laboratory, and
- 10 public access computer stations in the existing Mildura campus library.

La Trobe University has strong links with the Sunraysia Institute of TAFE and collaborative library services will be a feature of the new developments. ■

ICT boost for education in northern Victoria

Extensive involvement in northern Victoria – with campuses in Albury-Wodonga, Beechworth, Bendigo, Mildura, Mt Buller and Shepparton – are a feature of La Trobe University's educational mission.

These campuses provide regional communities with access to the educational resources of a major international University.

Last year, La Trobe upgraded its communications and information technology infrastructure at all these regional campuses, to give staff and students wider access to education, research and information materials.

All except Mildura which, away from the main interstate fibre-optics cable paths along the Hume Highway, had proved difficult to include in the University 34Mbit microwave, communications system. It had remained linked to La Trobe's main Melbourne campus at Bundoora by a slow and expensive leased ADSL line.

The new system – apart from boosting educational delivery (via online text, video and voice), achieving equity with staff and students on other La Trobe campuses, and assisting TAFE students and staff in Mildura – can also be used by other Victorian universities with remote campuses.

Increasingly, students and staff require access to online catalogues and databases, online course material, electronic journals, and lecture support material (including audio streaming and video streaming of lectures) in order to undertake their studies and research.

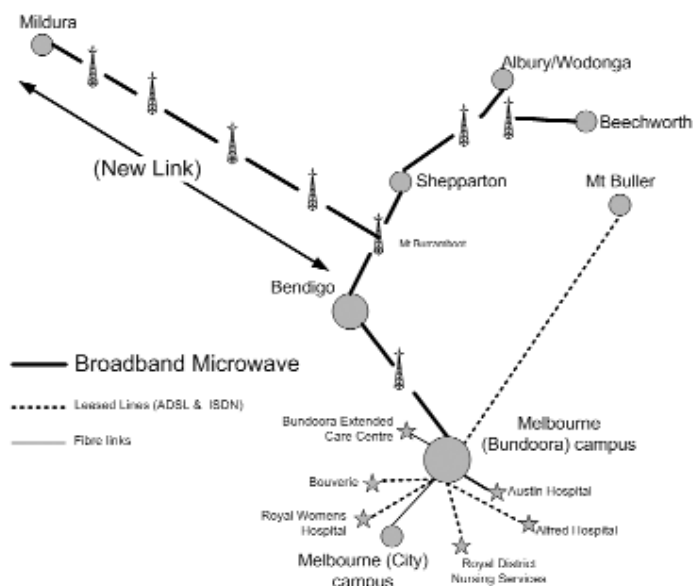
La Trobe's Mildura campus offers studies in arts (English, history, sociology, politics, art history, archaeology, philosophy, psychology), primary education, visual arts, business, first year science, nursing, and first year viticultural science and wine production. A new course in social work was introduced this year.

The enhanced infrastructure will enable the expansion of course offerings through the availability of online subjects and flexible delivery of courses.

In particular, the conduct of health science courses via flexible delivery will become viable as the infrastructure becomes available. Other future course offerings under consideration, subject to funding, include tourism and hospitality, environmental science and arts heritage.

A number of the University's collaborative links also will benefit from the new ICT links. The La Trobe Mildura campus building will house the Lower Basin Laboratory of the Murray Darling Freshwater Research Centre, where postgraduate and honours students will carry out research under joint guidance of University and Freshwater Research Centre staff (*See previous page*).

The University, in a local educational partnership known as Riverlink provides opportunities for postgraduate research related to the region's irrigated horticulture industries. There are plans to have 10 postgraduate students undertaking studies for their PhD degree under this arrangement within the next four years. ■



Academic research libraries go 'on line'

La Trobe University early this year awarded a contract to provide software for Australia's new Academic and Research Library Network to Ex Libris Australia, following intensive evaluation through a tender process.

Ex Libris is a leading worldwide developer of high-performance applications for libraries, information centres and researchers used in 22 countries.

The network, known as AARLIN, will be rolled out progressively to 21 participating Australian university libraries over the next 12 months.

La Trobe University is the lead institution in the AARLIN project. Vice-Chancellor Professor Michael Osborne, said he was grateful to the Commonwealth Government for providing funding for the project.

'The new electronic environment requires that the higher education sector, including libraries, should rely on new forms of collaboration, not only among themselves, but also with external partners, to share information resources electronically, to break down current organisational structures, and to reject the 'go-it-alone' mode that higher education institutions have for so long pursued.'

La Trobe University Librarian and AARLIN Project Director, Earle Gow, said the proposal to develop AARLIN emerged from a meeting of the Council of Australian University Librarians in 1999, following concern about the 'crisis in scholarly communication.'

From the start of this year the project will integrate library resource sharing services, providing users throughout Australia with an overall view of the information resources available in collaborating libraries. ■

GRADUATE DESIGNS 'WIRELESS'

computer connection

The tangle of wires from your PC to your keyboard, mouse, printer and joystick may become a thing of the past.

To achieve this, La Trobe University honours graduate in Computer Science and Electronic Engineering, Karol Szwed, right, has designed an ingenious 'wireless' link that allows Universal Serial Bus (USB) peripherals to be converted into wireless devices.

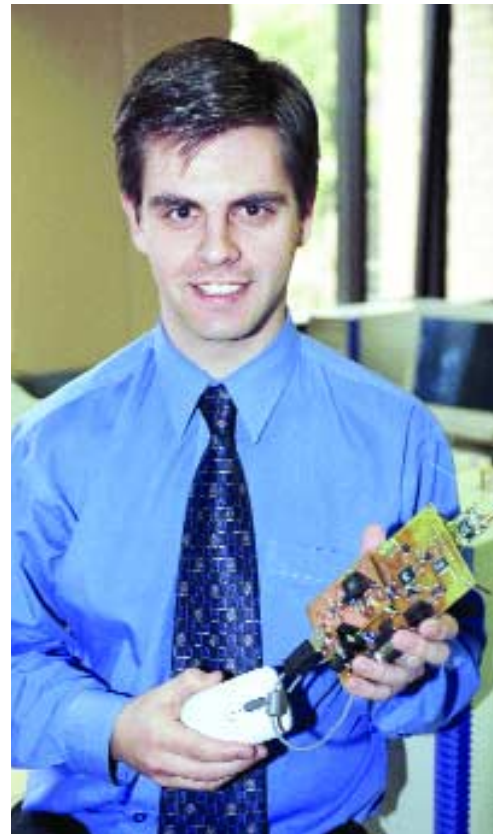
His device 'fools' the personal computer into believing that the devices are connected by cable. It comprises a small 'base station' plugged into a PC and a 'remote station' that connects to the USB.

The prototype enables commands and data to be transmitted more than 50 metres, well beyond the distance achieved by conventional USB cable. Mass-produced, he believes his invention could be very

reasonably priced. Mr Szwed said USB technology – designed to replace ageing serial and parallel ports – is used in most late model PCs. A low-cost solution, it simplifies peripheral connection to a PC.

Mr Szwed was La Trobe's top student for both Electronic Engineering and Computer Science in 2002. His new wireless USB Bridge was part of his final year project for his Electronic Engineering degree.

The prototype 'went public' last December at the Department of Electronic Engineering's Annual Hooper Memorial Project Presentation. Fourteen La Trobe students demonstrated projects with possible commercial potential to industry representatives. Several companies have shown an interest in his invention, said Mr Szwed, who now works for a leading IT company. ■



Improving Aboriginal health – from page 3

time frame, but such knowledge is needed to identify changes that can produce sustainable results.

Federally funded, Cooperative Research Centres bring together researchers from universities and other government and private agencies in long-term collaborative arrangements to support research and development in a number of fields. Headquartered in Darwin, the new Centre aims to facilitate sustainable improvement in Aboriginal health. Its four principle objectives are to:

Undertake strategic research on health systems, health determinants and health conditions; transfer research findings and new knowledge into policy and practice to improve primary health care, build sustainable bases for prevention and early intervention and reduce impact of conditions; strengthen the capacity of, and develop career pathways for, Aboriginal people in health and related areas; and undertake higher quality research with greater impact on Aboriginal health outcomes through improved research partnerships, greater Aboriginal participation, control and better ethical practices. ■

Truth or phiction?

The cliché 'One picture is worth a thousand words' begs to be questioned.

So does the less well-known pronouncement – by Hungarian painter and photographer, Laszlo Moholy Nagy – that: 'The illiterate of the future will not be those who are ignorant of writing, but those who are ignorant of photography'.

To make us 'read' photographs more accurately, and appreciate the art of the photographer, La Trobe University Bendigo lecturer in Visual Arts, James McArdle, has curated an exhibition, *Phiction: Lies, Illusion and the Phantasm in Photography*, that has been highly successful in its tour of Victorian metropolitan and regional art galleries.

The exhibition will visit the La Trobe University Art Museum on the main Melbourne campus at Bundoora from 8 April to 15 May. It comprises the work of 40 well-known Australian photographers including Frank Hurley, Bill Henson,

Carol Jerrens, and Leah King-Smith.

Instead of a caption describing each photograph, images are accompanied by text from an Australian work of fiction unrelated to the photograph – challenging the viewer to question the image and substitute their own reading, says Mr McArdle.

'Sometimes our only recollection of an event is the photograph. Might the photograph even be used to supplant memory, replacing it with something that has equal veracity but, in fact, is a persuasive fiction, an implanted memory?'

Mr McArdle delivered a paper on the exhibition at a conference on 'Image and Imagery' in Canada last October.

The exhibition was selected from the Horsham Regional Art Gallery, with support from the State government through Arts Victoria. Further details from (03) 9479 2111. ■



Laugh

and *not* all the world laughs with you



The old axiom 'Laugh and the world laughs with you' is not entirely true.

Research at La Trobe University into the effects of 'canned laughter' strongly indicates that laughter is infectious primarily within groups of like-minded people.

Dr Michael Platow, a senior lecturer in the School of Psychological Science, led a team of students in a novel experiment that revealed some surprising facts about social laughter.

Their results showed that laughter is subject to the same psychological factors governing other forms of social influence, including those often involved in advertising, religious and political communications, and collective action.

Dr Platow began his analysis by building upon 'Self-Categorization Theory'. Among other things, this theory locates social influence within people's group memberships.

'Group memberships can be based on nearly any category people belong to, such as race, gender, university or political parties,' Dr Platow said.

'Research has shown that we are persuaded by people in our own groups, our 'in-groups', and not by people in other groups, known as 'out-groups'. This finding is quite robust, having been shown with people's attitudes toward school exams, drug-taking, and even preferences for modern paintings,' he said.

The desire to test the effects of 'canned laughter' came to Dr Platow when riding on a Melbourne train. Overhearing a group of school kids laughing at jokes he did not find funny, he realised that he probably would have found the jokes funny if he were one of the kids – a member of their group.

Dr Platow figured that laughing with the laughter of others was most likely subject to known principles of social influence.

To test his ideas, Dr Platow and seven third-year Bachelor of Behavioural Science students conducted a controlled laboratory experiment of social laughter.

The research team recruited 60 La Trobe University students. Each student listened for six minutes to a tape recording of a stand-up comedian whose jokes had been screened to eliminate racist and sexist content.

Half of the student-participants listened to a recording with canned laughter, while the other half listened to the same recording without canned laughter.

'We laugh to the laughter of fellow in-group members.'

Added to the presence or absence of canned laughter was the critical twist in the experiment. Half of all participants who heard canned laughter and half who did not were told that the comedian performed live in front of a La Trobe University audience. In this way, when there was canned laughter, it was supposedly coming from fellow in-group members, and should therefore be influential.

In contrast, the remaining participants were told that the comedian's audience comprised One Nation Party supporters. Dr Platow's

research showed that the La Trobe University student participants did not identify with One Nation. To that degree, it was an 'out-group', and any canned laughter should not be influential.

After receiving appropriate ethics approval, the research team observed all participants through a one-way mirror, noting the frequency and duration of laughter. Participants themselves also rated the comedian on scales of 'humorous', 'entertaining', 'boring' and 'potential for success'.

The most revealing result was that canned laughter was influential only among those participants who also believed they were listening to the comedian performing to fellow La Trobe students. These participants laughed nearly four times as much as those in the other three experimental groups. Hearing laughter from the 'out-group', the supposedly One Nation Party supporters, was as useful as hearing no laughter at all.

The same pattern was found in the ratings of the comedian. Those participants who heard 'in-group' laughter rated the comedian as having greater potential for success, as well as finding him more humorous and entertaining, and less boring than the other three groups of participants.

Dr Platow concluded that canned laughter works like other forms of social influence. 'It is not the case that our laughter in response to that of other humans is a basic human response. We laugh to the laughter of fellow in-group members.' ■



Research with a DELICIOUS OUTCOME



Selecting grafts to fight disease. Top: A pod of cocoa beans.

Next time you enjoy the sensuous taste of chocolate, spare a thought for those working to ensure that the world supply of chocolate is maintained.

Among them are two botanists from La Trobe University, who are helping improve cocoa farming on the Indonesian island of Sulawesi.

Reader in Botany, Dr Philip Keane and post doctoral fellow, Dr Peter McMahon, are half way through a \$400,000 three-year Australian Centre for International Agricultural Research (ACIAR)-financed research project to help Sulawesi cocoa growers improve production.

A federal government authority, ACIAR was created to help developing countries through sharing Australia's agricultural research expertise.

Apart from chocoholics worldwide, the greatest beneficiaries of the research will be 400,000 small farmers on Sulawesi whose output makes their island the world's third largest cocoa exporter.

'The life of small holders with a typical five hectare plot of cocoa trees on Sulawesi – and in other cocoa-growing parts of the world – is not easy,' says team leader, Dr Keane, who has been involved in cocoa research in Papua New Guinea and other places for more than three decades.

Chocolate is made from cocoa beans produced in pods formed on small trees that originated in the Upper Amazon region of South America. Mayans and Aztecs used chocolate as both food and medicine.

'Cocoa production has a history of being destroyed by virus and fungus diseases,' says Dr Keane. 'Production in Brazil, once the second largest cocoa producer in the world, was largely destroyed over the last decade by a disease called Witches' Broom.'

Extensive cocoa production began in Sulawesi in the 1980s. A trouble-free beginning allowed growers to make a good living. Two main problems, a fungal pod rot and pod-boring insect, now seriously threaten the crop. A dieback disease that Dr Keane studied in Papua New Guinea is also a potential problem.

'Basically, our project is to encourage the farmers to reduce the effects of these problems by side-grafting on to infected trees pest and disease-resistant bud wood selected locally,' Dr Keane says. 'While the old wood still produces cocoa pods, the new wood which gradually replaces the old, produces disease-resistant pods.'

'This technique of local selection is possible because Sulawesi has a great diversity of cocoa trees, based on plantings of old Trinitario types from Java, Amelonado types from East Malaysia and hybrids including Upper Amazon types introduced from both Malaysia and elsewhere in Indonesia.

From these, many hybrids have emerged and some of the most promising ones are being evaluated in replicated field trials.

'This is not genetic engineering,' says Dr Keane. 'We are using natural genetic

variation in a technique practiced since agriculture began 10,000 years ago, selecting from plant material that has survived natural epidemics of pests and diseases.

'Local farmers are pivotal in finding and selecting disease resistant trees from which we select the material to be budded. We are encouraging them to copy what we are doing in the field trials. By doing so, they will not only greatly reduce crop losses due to diseases but also produce better quality cocoa pods from the improved genotypes.'

The research underscores a relationship between Australia and Sulawesi going back hundreds, if not thousands, of years. Most Sulawesi cocoa growers are from the Macassan and Bugis groups, traditional seafaring peoples whose ships visited northern Australian shores to trade for beche-de-mer and other products.

Drs Keane and McMahon are working with Dr David Guest of the University of Melbourne, and Dr Smilja Lambert of Mars Confectionary (Australia) at Ballarat.

In Indonesia, the project is conducted by Mr Arief Iswanto and colleagues at the Indonesian Coffee and Cocoa Research Institute, Jember, East Java, as well as staff of the Institute of Agricultural Technology Transfer at Kendari, South-East Sulawesi, led by Dr Suhardi and Mr Abdul Wahab, with assistance from PT Effem, a Mars subsidiary in Makassar. ■

FOR 50 AND OVER

Strong muscles mean better health

La Trobe University physiotherapists are trying to persuade more people aged 50 years and over to safeguard their health by developing their muscle strength.

With the Council on the Ageing they are encouraging half-centenarians to build muscle strength following a research project during which a four-member team from La Trobe's School of Physiotherapy verified the health benefits of muscle strength training.

According to physiotherapist, Scott Bradley, the team examined the results of every research project conducted in the world relating to the benefits, or otherwise, of increasing the muscle strength of people 50 years of age or over.

'We reviewed more than 2,000 scientific papers dealing with all facets of muscle strengthening. The bottom line from the 50 randomised controlled trials examined in detail, was that strength training was profoundly effective in increasing upper body and leg strength. In turn, this has great health and lifestyle benefits,' Mr Bradley said.

'We are not aiming to develop a post-50 population with bodies like Mr and Miss World with bulging biceps and pecs. Our aim is to increase muscle strength so that people can continue to be active longer and to avoid some of the more common ailments of older people.

'There is an ageing population in the Western World, and Western lifestyle and ageing are associated with decreased physical activity. Changes in the kinds of work many people perform have resulted in much less physical activity, particularly in the post 50 age group.

'Also, the number of people over 50 as a proportion of the total population is rising



Mr Bradley supervising exercise: three months can increase strength by 20 per cent.

rapidly. There are economic and other benefits for this group to remain as healthy as possible.

Mr Bradley said from the age of 50, people lose about 10 per cent of their strength per decade and five per cent of their muscle per decade.

'Research in many parts of the world indicates that loss of muscle strength and muscle mass leads to many problems including diabetes, high blood pressure, obesity and possibly osteoporosis.

'However, with just three months of exercises to strengthen muscles, people can increase their strength by 20 per cent.

This would consist of exercise sessions two or three times a week involving eight to 10 separate exercises using machine weights and 'resistance' elastic stretch tubing. 'Age does not matter. Your muscles will still get stronger as there is no upper age limit. In one project overseas, people in their nineties achieved enormous strength gains following strength training,' Mr Bradley said.

The research revealed that such an exercise regime led to improvements in balance

which meant those participating had fewer falls. Falls were one of the most common causes of injury in older people.

'Increased muscle strength also led directly to improvement in a range of physical activity including stair climbing and walking. The jury is still out on whether increased muscle strength helps to deter osteoporosis,' he said.

La Trobe's research team – which also includes Professor Meg Morris, Dr Karen Dodd, and Dr Nicholas Taylor – is now expanding the research to discover what can be done to ensure that people, once started, keep up their exercise program.

They are also planning to find out whether increasing muscle strength benefits people with specific age-related conditions, such as osteoarthritis, osteoporosis, Type 2 diabetes, hypertension, and cardiorespiratory disease.

The Council on the Aging runs a program entitled 'Living Longer Living Stronger', designed to increase the range and quality of strength training for older people, at a number of centres in Victoria. Further information is available, tel: (03) 9654 4456. ■



JOINT RESEARCH FOR A SMARTER WEB



Professor Meersman: La Trobe has an international reputation for its computer expertise.

La Trobe University is emerging as a leader in a new field of computer science known as computer-based semantics.

Professor Robert Meersman, who recently spent six weeks at La Trobe as a Distinguished Visiting Fellow, says computer-based semantics, and in particular the 'semantic web', means making the internet more meaningful by giving it more 'intelligence'.

'It ensures the web is more logical, a key property if we want our search engines and portals to return all relevant information, and not more than that, about a topic we are interested in.'

Professor Meersman leads the Laboratory on Semantics Technology and Applications Research (STARLab) in the Department of Computer Science at the University of Brussels. He was on his tenth visit to La Trobe in 15 years.

He worked for six weeks with the Head of La Trobe's Department of Computer Science

and Computer Engineering, Professor Tharam Dillon. Both researchers are members of a working group, part of the Database of the International Federation of Information Processing.

Professor Meersman is also president of the International Foundation for Cooperative Information Systems and a frequent speaker at international computer science events. He and Professor Dillon co-chaired an international congress on semantics for e-commerce systems held in Hong Kong in 1999.

'La Trobe has an international reputation for its computer expertise,' says Professor Meersman, 'particularly in software engineering, and this is why I have been back here so many times.'

He says his research interests have evolved to semantics after years investigating many related aspects of informatics including theoretical computer science, databases and conceptual modelling.

'Unfortunately, in everyday English, the meaning of the word "semantics" is frequently misunderstood. Some people believe it means sticking to the strict letter of language, or even obfuscation, and therefore using language to confuse.

'But it really stands for "meaning" and that is the way we use it in logic and computer science.' ■

CHEAP SUPER COMPUTER for your desk?

If personal computers of the future can be made cheaper and 'smarter' – as 'smart' as today's multi-million dollar super computers – more people will be able to solve problems involving mathematical modelling and complex mathematics.

For example, there might be more accurate weather forecasts, businesses may get more profit from a given input, or aircraft operators could calculate better flight paths using the least fuel for a given wind pattern.

To help hasten the advent of cheaper 'super' computers was one of the reasons why Distinguished Visiting Fellow, Dr Elizabeth Mansfield – a former Australian now from the University of Kent – recently spent three months at La Trobe's Institute for Advanced Study.

Dr Mansfield is a frequent speaker at leading international conferences on mathematics. At La Trobe she collaborated with two of the University's mathematical and statistical scientists, Dr Reinout Quispel and Dr Geoff Prince.

'Basically we are working on the theory of numerical algorithms used to solve a wide range of problems in such areas as engineering, physics and meteorology – in fact, anywhere where maths is used for

practical purposes,' Dr Mansfield said. 'In the past we have used bigger and more expensive computers to get better accuracy. For instance, it is essential to have super computers to calculate accurately 24-hour meteorological forecasts.

'We are looking at the mathematical properties of a computer's code, and our aim is to design the mathematics of what a computer is doing in order to obtain similar results from a much smaller computer. In other words, we are aiming for smarter programming.'

A graduate from the University of Sydney, Dr Mansfield has worked at the University of Kent at Canterbury since 1995. ■

When parents separate

A NEW APPROACH to protect children



Counsellors and mediators advising separating couples around Australia are being encouraged to take a radically different approach to safeguarding the welfare of children in dispute.

The new direction has evolved out of a \$350,000 project recently completed for the Federal Attorney-General's Department to help professionals to work more effectively with separating couples in high conflict over their children.

Dr Lawrie Moloney – Director of La Trobe University's Department of Counselling and Psychological Health in the Faculty of Health Sciences and one of the researchers who introduced the changes – says the new direction is leading to significantly different practice.

'There has been a paradigm shift in thinking about methods of safeguarding the interest of the children of divorcing or separating parents.' Dr Moloney says separating couples in high conflict take up disproportionate amounts of legal, health and welfare resources.

Recent research also demonstrates that damage to children comes not from structural changes caused by separation, but by unresolved conflict between parents. Accordingly, the project has developed child-focused and child-inclusive approaches to post-separation parenting disputes.

The approaches have been described and demonstrated at workshops and symposia to more than 800 professionals – counsellors, mediators, specialist lawyers and therapists – throughout Australia.

Dr Moloney says that in the past, many professionals believed they needed to resolve emotional issues between the parents before they could focus on the needs of the children.

'The problem with this approach is that by the time these adult issues are resolved, the damage to the children caused by the unresolved conflict is done. We found that the majority of couples can focus on their children's needs even though their inter-personal issues remained unresolved. But it requires high levels of skill on the part of the professionals and in some cases, a re-evaluation of some basis assumptions.

'Traditionally counsellors and mediators have also tended to see their role as being in charge of the conflict resolution process, but have felt that the content has been the couple's business.

'This approach assumes that the parents are in a state of mind in which they can adequately represent their children's interests. This is what we might normally expect of parents. But in the midst of the grief, anger and pain of separation and divorce, it is not always a realistic expectation.

'We have helped counsellors and advisors become more aware that they must become active child advocates in the service of avoiding the highly destructive impact of on-going conflict on children.'

Dr Moloney has ten years experience as Director of the Family Court Counselling Service and a strong interest in child-related issues in family law.

Others involved in the project were Dr Jenn McIntosh, a psychologist in private practice and advocate for children, who provided a key developmental psychology perspective, and Dr Tom Fisher, from La Trobe's Faculty of Law, who linked the social issues involved to legal requirements and constraints.

Dr Joan Kelly, a leading American psychologist involved in research on the impact of divorce and separation on children, was a consultant to the project.

As well as written material, the researchers and La Trobe's Centre for Online and Multimedia Technologies, have developed three videos to help professionals and separating couples.

One of these, *Children in Focus - Conflict and Choice*, won the 2002 Australian Video Producers' Association award for a Best Corporate Training Video.

Details of the project will appear in a special 'Children in Focus' edition of the *Journal of Family Studies* in April 2003, published within La Trobe's School of Public Health. ■

Further details on www.childreninfocus.org

There's gold in them regions!

New historical research focusing on four key gold mining centres, Bendigo, Castlemaine, Maldon and Creswick, will attempt to reconstruct domestic and neighbourhood life between the 1850s and 1930s.

The project involves Dr Charles Fahey of La Trobe University, Bendigo. It has been supported by a \$140,000 Australia Research Council grant and is being conducted in collaboration with Dr Alan Mayne from the University of Melbourne.

Dr Fahey said much gold mining history to date has dealt with individual towns rather than regions. The new work recognises goldfields were interconnected. 'People moved between towns, interacting for work, business and social opportunities,' he said.

'This project will consider how these communities evolved during and after the gold rush years.' ■

La Trobe, Gould League appeal to **SAVE URBAN WILDLIFE**

La Trobe University in association with the Gould League of Australia has launched an appeal for funds for its Melbourne Wildlife Sanctuary. The Sanctuary is located on the University's main Melbourne campus at Bundoora and attracts visitors, environmentalists and bird watchers from around Australia.

It aims to become a world-class eco-tourism and environmental education facility in Melbourne's rapidly growing north-eastern 'green wedge corridor' – only half an hour's drive from the city.

A visitors' centre is being designed by leading Australian environmental architect, Greg Burgess, best-known for the Aboriginal centres at Uluru in Central Australia and the Grampians in Victoria.

Sanctuary patron and La Trobe Chancellor, Emeritus Professor Nancy Millis, said the centre will house laboratories, classrooms and interpretive material for use by school children, university students and researchers.

Professor Millis, one of Australia's most eminent biological scientists, said kangaroos, marsupial mice, possums and sugar gliders have inhabited the Sanctuary for some time.

Rare native water birds have returned recently, as a result of pioneering natural

storm water treatment works by the University as well as the effects of drought elsewhere. And a breeding and demonstration site for Native Fish Australia is also planned for the Visitors' Centre.

Nine times the size of the MCG, the 28 hectare the Sanctuary re-creates an open range environment for fauna which existed in the Melbourne area before European settlement.

Professor Millis said the Sanctuary will allow visitors to see Australian animals living freely in native bushland.

While most wildlife sanctuaries in Australia are created from remnant habitat, the Melbourne Wildlife Sanctuary is highly unusual in that it has been restored from degraded grazing land on which the University was built in 1964.

Based on the vision of early La Trobe zoologists and planners, campus development included a Biology Reserve in the original master plan. Other reserves have since been added – Gresswell Forest in 1978, Strathallan in 1995, and Gresswell Hill last year – providing a 'green wedge' for inner urban Melbourne.

Regular University planting on the Sanctuary and the surrounding reserves has recently been boosted by Conservation Volunteers Australia. More than 20,000 new

plants were added during the past 12 months by volunteers from Australia and visitors from as far a field as Korea and Scandinavia.

On the Sanctuary La Trobe has pioneered the use of simulated billabongs and special wetland plants as environmental treatment for storm water run off. (*See next page.*)

Following recent housing development near the campus, additional lakes have been built at the insistence of the University – creating one of the first settlement and aeration pond systems in Victoria as part of a residential estate.

These northern wetlands help protect water quality not only at the Sanctuary, but also in the University's Moat system, Darebin Creek and, ultimately, the Yarra.

The improved water quality has attracted birds such as the Little Bittern, the Pink-eared duck, the Blue-billed duck, the Australasian Bittern and Baillon's Crake.

Another lake and retarding basin will be built within the Sanctuary to treat storm-water from the new Springthorpe housing estate and act as flood mitigation. Money raised by the appeal will also be used to fund special fences to keep out foxes and other predators.

The Sanctuary's strong educational focus includes programs complying with the Victorian Government's Curriculum Standards Framework. These will be expanded.

Education programs are also planned for local government employees, urban planners and storm water engineers on the environmental treatment of stormwater run off and the benefits this brings to the amenity of Melbourne suburbs. ■

People wishing to contribute to the Melbourne Wildlife Sanctuary appeal can visit the Sanctuary's website on: www.melbournewildlife.com.au or ring (03) 94791206.

Hundreds of bird watchers – many from interstate and one from as far as London – flocked to La Trobe University's northern wetlands in January.

They were attracted by the chance to see the return of rare bird-life to an urban area, in particular the arrival of a group of Little Bitterns, too shy to photograph for this report.

The tiny birds have joined more than 300 species of native wildlife on La Trobe's Wildlife Sanctuary and its wetland environs.

Left: a group of bird watchers on the wetlands. Inset: a Baillon's Crake which is also rare in the Melbourne area. Far right: a Clamorous Reed Warbler.

All bird photographs by David Burren.



Melbourne Water sponsors Wildlife Sanctuary

Melbourne Water has provided \$50,000 to La Trobe University's Melbourne Wildlife Sanctuary for training programs relating to the treatment of storm-water run off.

Melbourne Water said the Sanctuary demonstrated the benefits of environmental planting – improving both the quality of water and the natural environment.

La Trobe pioneered the natural treatment of storm-water more than 25 years ago by building billabongs on the Sanctuary. These are now used throughout Victoria as a model for reducing pollution created by storm-water run-off.

Emeritus Professor Nancy Millis, Sanctuary Patron and Chancellor at La Trobe, said she was delighted Melbourne Water had recognised the University's credentials in freshwater ecology, research and education.

'This is another feather in the cap for La Trobe as a leader in research and education into what is at last recognised as one of Australia's most vital resources,' she said.

Other La Trobe activities in water conservation include co-operative links with the Murray Darling Freshwater Research Centre at its Albury-Wodonga and Mildura campuses.

The Centre's Lower Basin Laboratory will be housed at the University's new \$2.5 million Mildura campus, ensuring continuing focus on water research in the Mallee and the development of sustainable water management practices for Victoria as a whole.

Postgraduate and undergraduate honours students undertake research at Centre laboratories under joint guidance of University and Freshwater Research Centre staff.

La Trobe also recently won a 'Savewater Award' for outstanding achievement in water conservation, for monitoring and reporting on its water use through annual benchmarking and involving staff and students in conservation measures. ■



What drives global tourism choice?

La Trobe University recently hosted an international symposium of more than 40 leading scholars in the consumer psychology of tourism, hospitality and leisure held at its Melbourne City campus.

Delegates from Britain, America, France, Germany, Spain, the Netherlands, Portugal, Austria, Taiwan, Turkey and New Zealand, reported on the latest research into how consumer psychology and consumer behaviour affects this important economic sector.

Symposium organiser, La Trobe Professor of Marketing, Geoffrey Crouch, said decisions on tourism and leisure are characterised by almost infinite choice.

'There are multi-stage and high-involvement decision processes, fragmented service encounters, multi-dimensional products, globally diverse consumers and complex social, cultural, ecological and political environments.

'Developing and applying consumer psychology and consumer behaviour theory to tourism, hospitality and leisure is a challenging and exciting field of studies.'

Professor Crouch – whose research ranges from how people choose convention sites for their associations to future possibilities of space tourism – said this was the third symposium in this rapidly growing field of research. The first was held in Hilo, Hawaii, in 1998, the second in Vienna, Austria in 2000.

Another La Trobe University contributor at the symposium was lecturer, Mr Garry Price, who discussed advertising in the eco-tourism industry. ■

OLDER, WISER & SAFER ON THE ROAD

A comprehensive three-year research project is seeking to pinpoint why a minority of older drivers are involved in road accidents – giving others in their age group a reputation they don't deserve.

Researchers say that only a small proportion of older drivers are responsible for the fact that, per kilometre driven, the accident rate of drivers aged over 65 is just below that of the most accident-prone age group, those between 18 and 25.

'We hope to determine how different impairments affect various aspects of driving.'

The joint La Trobe University, RACV and Southern Health study aims to ascertain why these drivers are more accident-prone than others in their age group – and how this group's tendency to have accidents can be reduced.

The project is led by Marita Flynn a neuropsychologist working with Southern

Health's Aged Persons Mental Health Service. She is also a qualified driving instructor.

Ms Flynn said Australia and other developed countries have an increase in both the absolute and relative number of older drivers.

Most older drivers are safe. For example, they watch their speed and avoid driving at night or in peak traffic. However, a subgroup with brain impairment related to medical illnesses common to their age – early dementia, and vascular diseases like major heart disorders and stroke – is responsible for most accidents.

'This is not surprising as driving is a highly complex and never completely routine activity,' she said. 'We hope to determine how different impairments affect various aspects of driving.'

Her report will make recommendations to both the RACV and Southern Health which, in turn, may suggest to government improved procedures to detect 'at risk' drivers. These drivers may then need further assessment by occupational therapy driving assessors, Ms Flynn said. ■



Australia Day HONOURS



La Trobe University Deputy Chancellor, Mrs Sylvia Walton, was appointed an Officer in the General Division of the Order of Australia (AO) in this year's Australia Day Honours list.

Mrs Walton, Principal of Tintern Girls Grammar School, has been Deputy Chancellor of the University since 1997.

Her award recognises her services to education, particularly her research into specialised curriculum and training programs.

Actively involved in the development of education policy, Mrs Walton is on several Boards of Studies and, in 1998, was the first woman awarded the Australian College of Education's Sir James Darling Medal for leadership in education.

The Foundation Director of La Trobe's Australian Research Centre in Sex, Health and Society, (ARCSHS) Professor Doreen Rosenthal, was also made an Officer in the General Division of the Order of Australia.

Accepting the award, she said she was proud of ARCSHS' contribution to

changes such as better sexual health programs in schools and the setting up of the State Ministerial Committee on young gays and lesbians.

Professor Rosenthal is Associate Dean, Research, in the Faculty of Health Sciences. She received her AO in recognition of her service in the fields of adolescent sexual health and HIV-AIDS. She has also been Deputy Chair of the Australian National Council on AIDS and Related Diseases. ■



Far left: Deputy Chancellor Walton officiating at a recent graduation ceremony.

Right, Professor Rosenthal: contributing to better sexual health.

Keeping tabs on Tongans

Tongans living outside their home islands in Western Polynesia may number about 100,000 – as many as remain in Tonga. Most have moved to Australia, New Zealand and the USA.

About 4,000 live in Melbourne, which has made research on the Tongan diaspora slightly easier for La Trobe University lecturer in anthropology, Dr Helen Lee.

She says migration of Tongans is motivated primarily by their desire for economic and educational opportunities that cannot be found in Tonga.

The results of her research will be published soon in a book, *Tongans Overseas: Between Two Shores*. The book describes the movement of Tongans, their experiences in education, employment, and their social interactions, including the continuing importance in their lives of extended family and church.

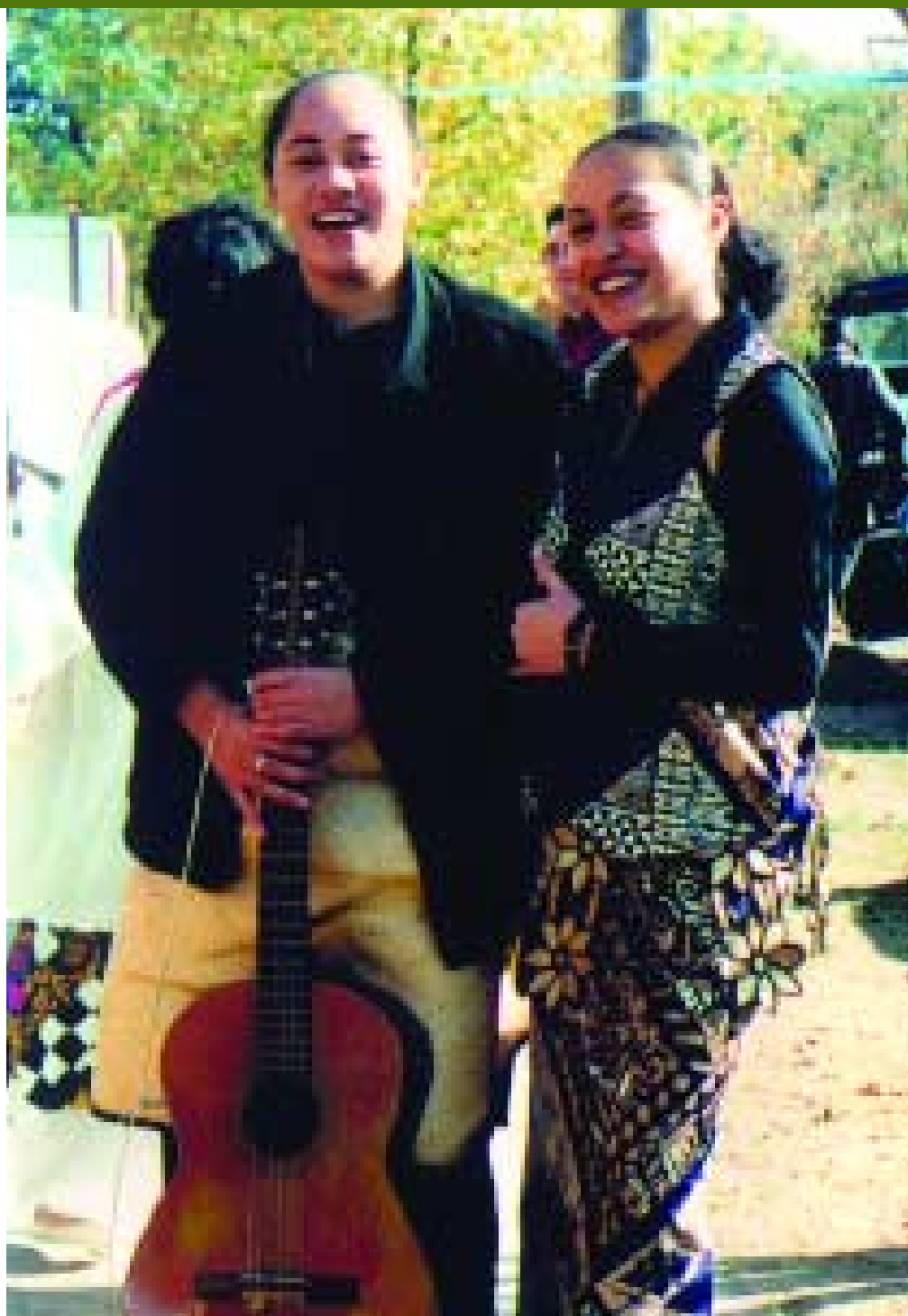
The Tongan economy relies heavily on the remittances they send, so the relationship between Tongans and their homeland is also important.

However, Dr Lee says Tongans face economic problems in their host countries because lack of education often confines them to lower paid jobs.

'This is particularly evident in New Zealand where Tongans are among the poorest of the poor, often clustered in disadvantaged suburbs.

'Things tend to be better in Melbourne where they are more scattered among the population, and some are reaching professional levels.'

Dr Lee says most Tongans keep to their Christian faith, the church remaining



central to their lives. They also tend to retain aspects of their culture, although this varies considerably, with some more willing than others to fit into their new society.

'Young people often have the greatest difficulties, feeling they are not accepted by either the host nation or other Tongans, who can regard them as not being 'real' Tongans if they do not speak Tongan or know the 'Tongan way'.

However, Dr Lee says young Tongans have enthusiastically embraced internet discussion forums and chat rooms, to have their voices heard and reaffirm their cultural identities. ■

La Trobe Open Days in 2003

Open Days will be held on La Trobe University campuses throughout Victoria on the following dates:

- Sunday 3 August* – Bendigo
- Sunday 10 August* – Shepparton & Mildura
- Sunday 17 August* – Albury-Wodonga & Mt Buller
- Sunday 24 August* – Melbourne (Bundoora)

Information about courses and studying at La Trobe from 1300 135 045

CALL TO ARREST 'DECAY OF DIVERSITY' IN HIGHER EDUCATION



Professor Osborne: 'Disadvantaged' groups – whose entry to university broader participation was meant to facilitate – are likely to suffer in the face of ever increasing fee contributions.

The 'insidious drift towards the functional university' was jeopardising the deeper and broader role of scholarship, La Trobe University Vice-Chancellor, Professor Michael Osborne, told a recent international gathering on the nature and role of universities.

'If we believe in universities as focal points for scholarship generally, as well as training grounds for the workforce, we need to articulate a clear, urgent and persuasive case before the infrastructure support for traditional fields is allowed to slide down the path of irretrievable decay.'

Professor Osborne, who is lead Vice-Chancellor for international issues of the Australian Vice-Chancellors' Committee, had been invited to speak on the internationalisation of higher education at the annual convention of the Hungarian Academy of Engineering in Balatonfüred. The meeting was attended by the Minister for Education of Hungary.

Professor Osborne said the drift was being 'facilitated, if not hastened, by the absence of any generally accepted view of the role and rationale of a university: witness the discordant views of inmates, of the media, of the government, of industry and of sundry other interest groups.'

'The change from elite higher education systems to large-scale participation had been crucial in changing the nature of the relationship of the university to society and government, and in effectively re-directing the focus of academic activity.'

'There is an obvious dissonance between encouraging still greater participation in higher education but reducing public funding. The effect of current policies in the UK and Australia is likely to be that the very "disadvantaged" groups – whose entry to university broader participation was meant to facilitate – will now actually suffer in the

face of ever increasing fee contributions. But it seems unlikely that government support for universities will be increased.'

Three possible sources for extra funding presented themselves, Professor Osborne told the conference: business and industry through a levy or taxation; students through the instrument of fees; and university income from other activities. The prospects of extracting funding from business and industry, except for customised programs or for specific research, was 'remote and hardly worth discussing'.

'Students in many countries already pay considerable sums by way of fees, sometimes, as in Australia, deferred and repayable through taxation. In the future they are likely to pay more, especially as numbers rise. The justification for fees – overtly declared in the UK recently – is that it is a career investment on the part of the student. The more this view becomes the norm, the greater the link will become between universities and employment.'

'So, to put it crudely, if additional funding is to be levied from students for a raft of practically useful subjects, where does this leave funding for other aspects of the university? Who on such a scenario will pay for the humanities and the social sciences? How will basic science attract sufficient funding to serve as a foundation for innovations in applied science?'

'The notion of a national investment to ensure continued diversity surely needs urgent consideration before it is too late.'

Professor Osborne added that the implications of increasing dependence on student fees to support universities were likely to be exacerbated by acquiring funding from external earnings. Leaving aside research consultancies, which were generally only for a specific purposes, the most obvious instrument was the export of higher education services.

'In Australia, for example, it is a major source of income for universities, accounting for some 15 to 20 per cent of all students – almost all undertaking vocational and/or professional programs of study. Globalisation can only accelerate the process of assimilation of higher education to a product or a commodity.'

'These various forces and pressures are forcing universities into an increasingly utilitarian role, a retrogressive step that will impoverish society, if not arrested,' Professor Osborne concluded.

'Whilst it is perfectly reasonable and legitimate to demand that universities now play a strong role in providing an expert workforce, in relating to the community, and in contributing to national priorities, this should not be at the expense of their traditional capacity to enrich all fields of human endeavour.'

'The need to find a formula that will support both of these objectives seems to me to be one of the great challenges of the day.' ■