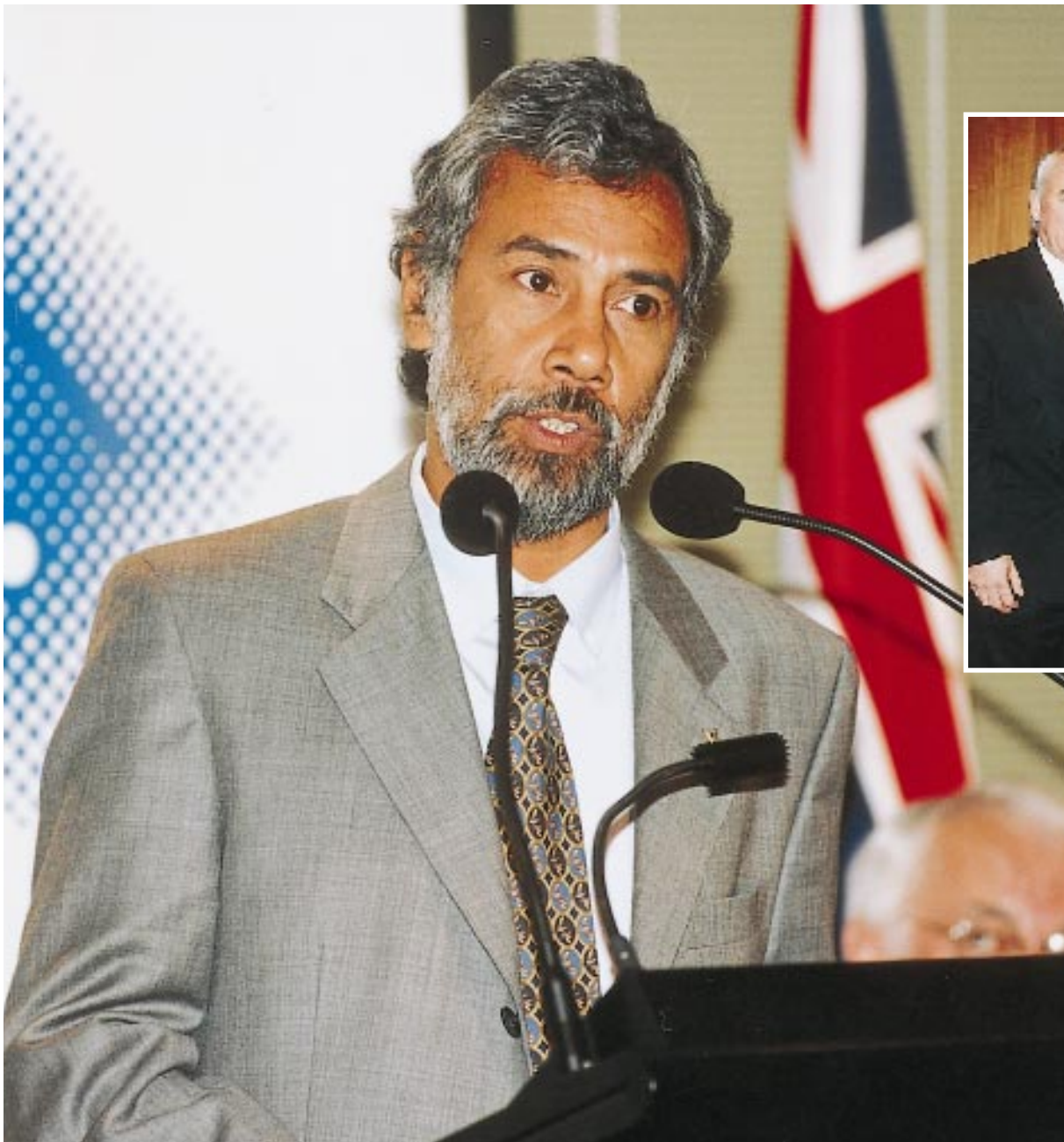


Nexus on the Net: www.vu.edu.au/mediacomms/nexus

Xanana Gusmão opens office at VU

City office becomes a centre for East Timorese reconstruction



By Barry Donovan

On 4 May Victoria University's City Flinders Campus became a new focus of East Timor's economic and political reconstruction with the official opening by Jose 'Xanana' Gusmão of an office of the National Commission for the Management of the Emergency.

The office has been established by the National Council of Timorese Resistance (CNRT), supported and made possible by Victoria University's donation of rent-free offices on the Campus.

It is only the second official CNRT representation office to operate on behalf of the East Timorese people in Australia, following the long-

running information office operating in Darwin.

As a mark of its significance, the opening was attended by a large diplomatic contingent from Canberra, as well as State and Local Government dignitaries including Deputy Premier, John Thwaites and Melbourne Lord Mayor, Councillor Peter Costigan, business and union leaders and members of the local East Timorese community.

In welcoming Xanana Gusmão on behalf of Victoria University, Acting Vice-Chancellor, Professor Michael Hamerston, said the office would play a major role in co-ordinating training for Timorese who were living in Australia and planning to return to East Timor.

"It will also mobilise material assistance and offers of support from local government, small business, community groups and individuals in Victoria, South Australia and Tasmania," he said.

"The office will have contact with people on the ground in all parts of East Timor to monitor exactly what is wanted, and where, to ensure that assistance is timely and targeted."

Professor Hamerston said that Victoria University was delighted to

cont'd on page 8

Xanana Gusmão officially opens the Melbourne office of the National Commission for the Management of the Emergency.

Above right: At the opening (l-r) Victoria University Acting Vice-Chancellor Professor Michael Hamerston, Deputy Premier John Thwaites, Xanana Gusmão and Lord Mayor Peter Costigan.

Melbourne to get world-class research facilities

VU-Austin Research Institute sign deal to see creation of new Victoria Institute of Biotechnology

By Barry Donovan

Victoria University and the Austin Research Institute are working in partnership to form a world-class facility, the Victoria Institute of Biotechnology, which will add enormously to Victoria's international expertise in the field of biotechnological research.

The Victoria Institute of Biotechnology will be established on Victoria University's Werribee Campus within the Werribee Technology Precinct as a research and development institute of international standard by delivering

outstanding commercial research opportunities and outcomes for Victoria.

The creation of the new institute was announced at the University's City Flinders Campus on 26 April.

Victoria University's Werribee Campus will be expanded with additional highly specialised research and teaching facilities to further advance some of Australia's strongest education, commercial and government collaborations.

The joint venture between Victoria University and the

cont'd on page 2



Victoria University Vice-Chancellor and President Professor Jarlath Ronayne and Director of the Austin Research Institute Professor Ian McKenzie sign the agreement to establish the new Victoria Institute of Biotechnology.

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Stats software hits funding snag

By Phil Kofoed

Statistics pervade all aspects of modern life – from science to public health to the management of the economy. Yet fundamental misconceptions and confusion about statistical concepts are widespread – and often resistant to conventional education methods. Just ask first year 'stat' students.

A new interactive software program called StatPlay, designed to overcome the hurdles of understanding core statistical concepts, was demonstrated at a CEDS seminar held in May at Victoria University's Footscray Park Campus.

Developed as a joint project by Professor Geoff Cumming of La Trobe University and Dr Neil Thomason of the University of Melbourne, StatPlay offers students the ability to view and explore multiple graphic representations of data and statistical concepts.

"The image is the key to memory and understanding," Professor Cumming told the audience of Victoria University teachers. "A visual image/mental picture is far easier to take away with you."

In development since 1994, StatPlay has been used by students across 12 disciplines at Melbourne and La Trobe universities, dramatically improving their understanding when grappling with statistical concepts.

Peter Webb, a Victoria University lecturer in Science/Maths education in the CEDS teaching

support unit, last year tested StatPlay with a group of first- and second-year psychology students having similar problems.

"The feedback from students was very positive," Mr Webb said. "Students can actually see what is happening and can play around with various parameters. It's very valuable as a learning tool."

He said what made StatPlay particularly innovative was its utility program Sam (as in 'play it again Sam') which records data entered in StatPlay and in playback reproduces all keyboard and mouse inputs allowing students to replay the graphic representations. Sam also features recordable 'demos' or lessons with a tutorial voiceover.

StatPlay is not yet fully developed as a tool to completely support statistics introduction courses, but its development has hit a snag.

Although funded generously by various grants and bodies over the past six years the developers have run out of money, and support from a major publisher is still wanting despite good feedback from independent reviewers.

"It still needs another six months' work by three people," Professor Cumming said. But he hopes the University of Melbourne will soon make available for a nominal fee "a good-working partial version" on CD or at least via the web.

"It's a crying shame they haven't been able to get a full version up and running," Mr Webb said.

the column

A welcome increase to TAFE funding

By Vice-Chancellor and President Professor Jarlath Ronayne



Professor Jarlath Ronayne

In this issue of *Nexus*, I warmly acknowledge the achievement of the Victorian Government in allocating additional funding to the TAFE system in this year's State budget.

The Government has recognised the importance of the TAFE sector by redressing the persistent funding cuts experienced in the recent past. Although the Government has retained the practice of taking annual 1.5 per cent productivity dividends in its funding framework, there has been a welcome net increase in the funds flowing to training. The additional funding for the University's TAFE Division will contribute to improved program delivery, facilities and training resources.

Victoria University's Footscray Nicholson Campus will benefit from a capital grant of \$1.4 million to refurbish the Beanland Building, which has required attention for some years. Students and staff in business, management and

performance programs can now look forward to substantial improvements in the quality of their infrastructure, which will include upgraded computing facilities, classrooms, performance areas and offices.

Other new funding will go towards the community jobs program facilitated by the University's Employment and Training Services Department. Our previous programs, such as those at Stony Creek and in the Werribee Wetlands, have proved a major success in providing training opportunities for local people in projects of direct benefit to their immediate communities. The Stony Creek Project, for example, last year saw 40 unemployed volunteers clear thistles and fennel, plant 400 wattles and gum trees, and construct retaining walls in the vicinity of the creek. Participants also completed several accredited modules in Horticulture, as well as training in first aid and the Internet, assisting a number of them to gain employment

or access to further education and training.

Our TAFE Division will also benefit from the Government's commitment to compensate providers for revenue foregone in granting tuition fee exemptions and concessions. There will be some supplementary funding for the backlog of building maintenance. And there will be some increases in funds for training delivery in recognition of the increased costs borne by institutions in recent years.

This good news comes on the heels of the State Government's commitment to fund the outcomes of the Post-compulsory Education and Training Review chaired by Peter Kirby. Victoria University, which hosted one of the review committee's forums in April, now looks forward to the Government's sustained support for the University's future delivery of high-quality education and training programs.

Melbourne to get world-class research facilities

cont'd from page 1

Austin Research Institute will produce a range of outcomes.

- Establish the Centre for Drug Design and Development, which will involve the discovery and production of drugs and reagents for the treatment of disease in humans and animals. This will entail bringing all aspects of design together in one centre to identify and produce drugs for medicinal and veterinary purposes and for use by other researchers.
- Capitalise on the Austin Research Institute's biomedical and biotechnology-based research at both fundamental and applied levels and on Victoria University's strengths in analytical chemistry, technology and business-based research and teaching.
- Further develop collaboration with world-class research groups and companies including those at the Werribee Technology Precinct, based on the specialised resources and expertise within the Institute.
- Incorporate specialised fermentation facilities for the large-scale production of recombinant proteins of antibodies.
- Focus on commercial outcomes, translating basic and applied research to support incubator industries for the development and production of on-site products and ultimately their testing and sale.
- Develop new training programs designed to produce entrepreneurial science graduates with highly developed skills in biotechnology that readily align with the needs of Australia's biomedical industries. Skills in the management of intellectual property will result in industry outcomes directly relevant to



Pro Vice-Chancellor (Research) Professor Vaughan Beck addresses the audience at the announcement of the new institute.

national wealth creation, and employment opportunities will be emphasised.

The Victoria Institute of Biotechnology will initially represent a \$34 million investment in the research and development capability of Victoria. The joint venture will provide \$15 million in new and refurbished buildings and \$5 million in equipment and infrastructure. Funding for an additional \$14 million is now being sought from the State Government as well as from commercial sources.

The Vice-Chancellor and President of Victoria University, Professor Jarlath Ronayne, said that Victoria University saw "tremendous" research and commercial potential in the establishment of the combined institute.

"Biotechnology is an enormously important industry for the world in the 21st century and we believe this new collaboration offers great opportunities for Victoria's growth," Professor Ronayne said.

The Director of the Austin Research Institute, Professor Ian McKenzie, said the renewed alliance between the Austin Research Institute and Victoria University would provide outstanding research and commercial outcomes.

"The Victoria Institute of Biotechnology builds on both our strengths and adds enormously to Victoria's reputation as the intellectual research centre of Australia."

See page 5 – American researcher to head laboratory in new institute.

news front

Selected recent media highlights featuring Victoria University

- The launch of the new Victoria Institute of Biotechnology at VU's Werribee Campus was reported by *The Australian*, *Herald Sun*, *Campus Review*, *Warrnambool Standard*, *Sunraysia Daily*, *The Werribee Times*, *The Werribee Banner*, *Radio 3LO* and *Radio BAY FM*. The institute is a joint project of Victoria University and the Austin Research Institute, establishing a world-class research and development facility by delivering outstanding commercial research opportunities and outcomes for Victoria.
- Victoria University's donation of rent-free office space in aid of East Timor's economic and political reconstruction was reported by *The Sunday Herald Sun*, *Campus Review* and the *Melbourne Times*. Established by the National Council of Timorese Resistance (CNRT) and launched by Xanana Gusmão, the office opening at the University's City Flinders Campus was attended by a large diplomatic contingent of Canberra, State and local government dignitaries, business and union leaders and members of the local East Timorese community.
- A number of local newspapers including *The Mail* and *The Williamstown Advertiser* reported on a unique pre-apprenticeship program to attract women to the electrical trades. Working in partnership with the Electrical Trades Union, Victorian Trades Hall Council, VicTech and Access Training and Employment, the new program will break down the inflexibility of the current training structure, enabling women with family and job responsibilities to participate in this training pathway in pursuit of an electrical apprenticeship.
- The *Herald Sun* reported on a joint Victoria University–Deakin University study to learn more about preventing osteoporosis and examining how food intake and exercise affect bone density among primary school-aged girls.

Graphic Arts students to put west on the map

By Nick Gadd

Little-known western suburbs attractions will be promoted thanks to an imaginative project involving VicUni students and a local MP.

Federal MP for Gellibrand Nicola Roxon has asked Graphic Arts students from VicUni's South Melbourne Campus to produce a map highlighting facilities of the region, with the aim of inspiring visitors to give them a go.

Ms Roxon decided to produce the map because many people have a stereotyped idea of the western suburbs. "They think it's all chemical plants and industry, but there's a hell of a lot more than that," she said. "We have attractions like the Living Museum of the West, the Footscray Arts Centre, the Newport Railway Museum and the Quang Minh Buddhist Temple. Even people who live in the region often don't know about them, and there isn't a map that shows all of them."

Ms Roxon approached VicUni because it has several campuses in

her electorate, which spans the City of Maribyrnong as well as parts of Hobson's Bay and Brimbank. "This is an opportunity to show off the students' work, the Uni and the region," she said.

All 32 students in the second year of the Diploma of Arts (Graphic Arts) will produce designs for the map. The best entry will be chosen in July by Ms Roxon and will receive a payment of \$500. The winning design will be distributed as a colour poster to 50,000 households and others may be picked up by local businesses. All the designs will be displayed in an exhibition and the students will include their work in their graduation folios.

To prepare the students for the assignment, Ms Roxon took the group – some of whom had never been to the area – on a bus tour of the west. Starting at Scienceworks, the bus wound its way through Williamstown, Footscray, Braybrook, Sunshine and Yarraville, stopping at important historical, cultural, educational and commercial sites.

"I'm very passionate about this because I know we've got a lot to show off," said Ms Roxon. "It's also good for students from the region, who know we get a lot of bad press, to work on a positive story."

Local organisations and business people are strongly supportive. "Anything that gives a boost to the local area is good," said Gaye Hamilton, director of Scienceworks Museum. The Western Region Economic Development Organisation (WREDO) is also backing the project.

Maureen Fitzgerald, co-ordinator of the Diploma of Arts (Graphic Arts) said the students would benefit by working on a real project. "What they get is real exposure to a client-based job. They are accountable for the artwork – the situation is quite different when you are dealing with actual clients. Involving industry like this really promotes professionalism."

Students were enthusiastic, saying that the project gave them an opportunity to learn about the local



The Venerable Thich Phuoc Tanb guides VicUni students around the Quang Minh Buddhist Temple.

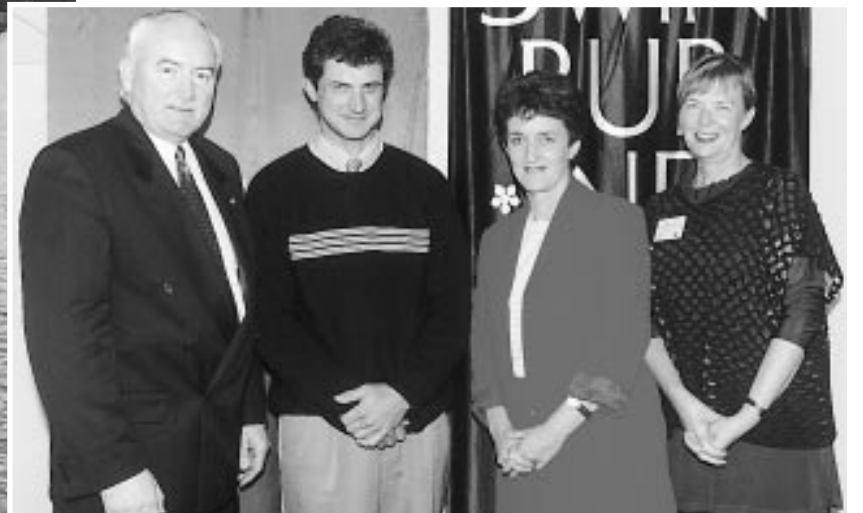
area as well as providing an opportunity to "do a real job".

The students must include some key features of the region but otherwise have freedom of choice about what to include. They have artistic license to present the information in any

way they like – including drawings, photographs and icons.

"When other people see what we're doing, they'll want to do the same thing," said Ms Roxon, who said several Parliamentary colleagues have already expressed interest.

Breath of fresh air for outdoor education



▲ At the launch of the VU-Swinburne project are (l-r) Victoria University Acting Vice-Chancellor Professor Michael Hamerston, chief executive officer of the Outdoor Education Group Tony Pammer, Divisional Deputy Vice-Chancellor (TAFE) at Swinburne University Virginia Simmons, and head of the VU School of Education Professor Maureen Ryan.

▲ Following the launch students demonstrate kayaking and canoeing on the Maribyrnong River.

By Anthony Lynch

Victoria University and Swinburne University have joined forces to allow students of Outdoor Education/Recreation from either institution to complete their studies with either a degree or a certificate qualification.

"What this means is that while completing either the Certificate IV or Diploma of Outdoor Recreation at Swinburne University, students may be simultaneously enrolled in Education subjects at Victoria University," explained Cathryn Carpenter from VU's School of Education. "If students are able to complete the required subjects concurrently, they may transfer into a second or third year Bachelor of Education in Outdoor Education."

Conversely, students enrolled in VU's Bachelor of Education (Outdoor Education) degree have the chance to exit with the Certificate IV or Diploma of Outdoor Recreation from Swinburne.

The program is designed to develop students' skills in guiding, leading and teaching in the outdoors, and includes subjects on risk management, environmental inquiry, wilderness first aid, philosophies and ethics of outdoor education, and resource management. Practical areas include bushwalking, kayaking, navigation and expeditioning.

The agreement comes after VU's School of Education in conjunction with Swinburne's TAFE Division completed a cross-sectorial project designed to optimise student access to training and education pathways in outdoor education and recreation.

After consulting with several Victorian providers of Outdoor Education and Recreation tertiary courses, a mapping exercise conducted by Hall's Outdoor Education identified the differences and similarities between the Swinburne and Victoria University courses.

"This mapping exercise contributed to the development of a pathway or equivalence model that will facilitate student mobility between the TAFE and higher education tertiary courses in Outdoor Education, while maintaining the integrity of each qualification," Ms Carpenter said.

In launching the agreement at the Riverview Function Centre on 4 May, Victoria University Acting Vice-Chancellor Professor Michael Hamerston said it "represents something I haven't seen before ... we have two institutions both working on the same good idea. It's an example of how the pathways milieu can be exploited."

Head of the School of Education Professor Maureen Ryan said that the project sits well within the programs of both universities. "It works not just across TAFE and higher education sectors, but also links with the secondary school sector."

nexus

Nexus is published by the Marketing, Media and Communications Branch of Victoria University of Technology.

Upcoming issue: 3 July 2000

Copy deadline: 22 June 2000

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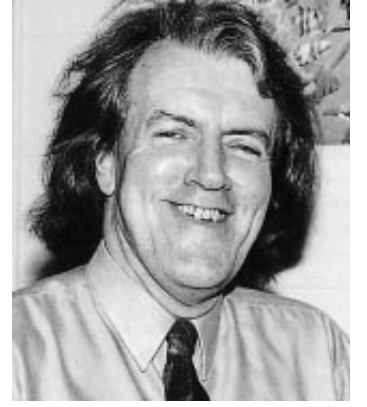
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Internet: www.vu.edu.au/mediacomms/nexus

outlook

Bend and stretch: does 'flex ed' have the answers?



Neil Hooley

By Neil Hooley, lecturer in the School of Education

In a previous but recent time, Australian universities catered for a much less diverse group of students than those who currently attend. The present cohort lives in a world more globalised than that of their parents' experience. Today's approach to the significance of knowledge is different, and where and how it is to be obtained is also different.

A larger proportion of students may now base their learning and understanding on a framework of practical, lived and immediate knowledge, rather than that found recorded in text and print. Important sites of influence and learning may include restaurants, sporting and entertainment venues, electronic information on disk and mobile telephones, with the university library having less attraction. Rupert Murdoch is reported to have commented: "The longer knowledge is stored, the less value it has."

There are two political and educational questions at stake here. First, can society continue to identify and agree on that bundle of knowledge considered essential and worthwhile for all its young people to encounter in a formal way? Second, what are the most

appropriate structures, curriculum and pedagogies that will both enable and encourage all young people to participate in the learning of such knowledge?

For universities, decisions on these questions are particularly acute, given that they involve difficult and integrated issues regarding cultural, disciplinary, professional and practical knowledge. Again, in the recent past, universities have relied on the lecture, tutorial, laboratory and fieldwork to accommodate their requirements. Today, the capacity of these techniques to meet diverse needs is increasingly scrutinised and new directions are sought. Flexible learning is seen as one way in which to proceed.

The concept of flexibility in learning, like everything else, is open to interpretation, but from a cognitive viewpoint it can be considered as encompassing the following four characteristics.

- 1 Establishment of a practice-based framework for teaching and learning, based on a set of principles that support participation, enquiry and engagement. The real question here is not so much the identification of the essential

body of knowledge, but the ways students have of connecting with that knowledge and how the theory and underlying explanations that are embedded in practice can be investigated.

- 2 Identification of categories of knowledge and practice that emphasise the main features of university life and learning: that is, the nature of practice and learning from concrete experience, participatory enquiry learning over time, research and critical reflection leading to theorising and critique.
- 3 Clarification of broad year-level and graduate learning outcomes, rather than short-term clumps of knowledge and pre-specified content, to form the basis of courses and the focus of teaching and learning. This involves a vertical rather than horizontal approach to teaching and learning, wherein the major ideas of a field are concentrated as the seed crystal of learning.
- 4 Implementation of innovative pedagogies to achieve learning outcomes that involve new curriculum designs. For example: students demonstrating learning outcomes rather than 'serving

time'; more weekend and/or evening lectures per semester, thereby freeing up study time for students and preparation time for staff; questions of practice and theory emerging from fieldwork rather than being initiated at the university; incorporation of information and communication technologies; and greater emphasis on small partnership teams rather than year-level groupings.

The above approach towards flexible learning attempts to come to grips with the broad impacts of globalisation and localisation and how these affect the views that young people have of themselves and of their learning. At the same time, the university retains its role of introducing, integrating and critiquing what it considers to be worthwhile knowledge, but within the context of students' lives, perspectives and values.

Whether or not different groups of humans have different learning styles and come to understand their worlds differently is a hotly contested issue, one that exists quite apart from university forms of organisation. It must be recognised, however, that this is an important question for feminist, indigenous

and other groups worldwide and is most significant for social justice and educational concerns. As the experience of students alters, or is at variance with a mono-cultural view, any university has a responsibility to ensure that its structures and procedures do not contribute to disadvantage but constitute a graph of 'best-fit' learning.

At important junctures or discontinuities in our biographies, humans have a choice on how to proceed, and it seems that this choice is starkly facing all Australian universities at present. It is extremely challenging and somewhat risky to highlight flexible learning, to de-emphasise the time spent formally in a course of study and, instead, respect the culture and background of students so that learning outcomes can be recognised much more quickly. Within the current context, flexible learning may indeed offer the means of strengthening grand narratives of culture, history, justice and aspiration in a way that current techniques cannot.

If you would like to contribute to Outlook, please contact the Marketing, Media and Communications Branch. Authors take responsibility for views expressed in this column.

Bio-engineers monitor million dollar pulse

By Phil Kofoed

When the producers of Channel Nine's 'Who Wants To Be A Millionaire?' quiz show thought it a good idea to televise the heart rates of contestants during their perilous climb towards a million dollars in prize money, they got two bio-engineers from Victoria University's Performance Technologies Unit to look after the technicalities.

For the uninitiated, contestants of 'Who Wants To Be A Millionaire?', hosted by AFL personality Eddie McGuire, answer a series of progressively harder questions. Prize money builds with each question answered correctly, and if a contestant gets 11 questions right – or 15 in a recently revised format – they take home a million dollars.

Bio-engineers Ian Fairweather and Robert Stokes from the University's School of Human Movement, Recreation and Performance at Footscray Park Campus have been developing cutting-edge telemetry technology (the remote radio collection of data) to collect biofeedback from athletes.

Their research – believed to be the first in Australia – is unique

because telemetry data is normally only accessible after a 'performance'. But they have developed the technology so that biofeedback is accessible immediately.

The technology was trialed on four contestants during an episode of the quiz show televised last March. Contestants wore a telemetry device that transmitted their heart rate to a radio receiver and PC for graphic display.

The heart rates of contestants showed extreme fluctuations, especially when the show was interrupted at critical moments for commercial breaks. "One contestant was an old guy who looked over 60 and his rate peaked at 220, which is close to his theoretical maximum heart rate," Mr Fairweather said. "He was shaking when he walked off the set."

The contestants' heart rates were not aired during the show, but the technology and the heart rate trends will be shown on a documentary of the program to be televised in June.

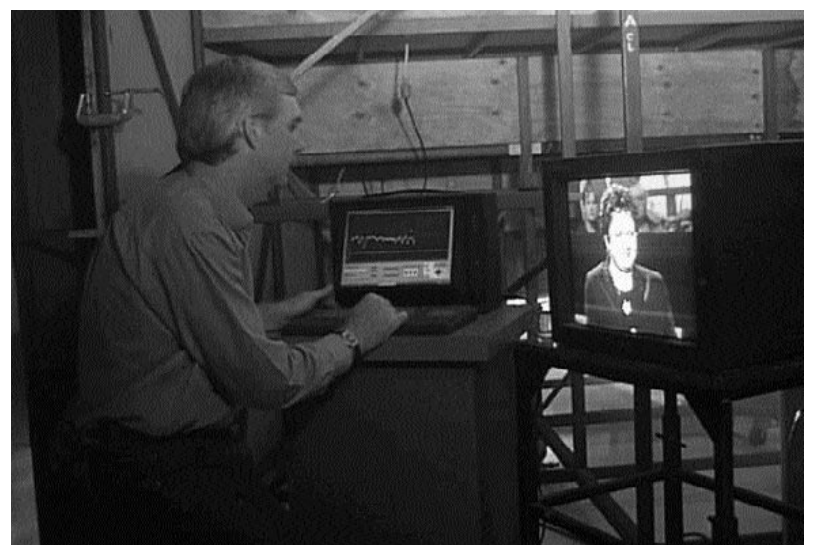
"The intention of the whole exercise was not to use wires," Mr

Stokes said. "And to prove that it could be done. It's a bit of a gimmick really, to add excitement to the show, but the producers are pretty excited about it."

The technology is being developed in collaboration with the Victorian Institute of Sport (VIS) to remotely monitor the activity levels of athletes and sports people during high intensity training. VIS sports science co-ordinator Dr Paul Gastin said the system allowed a coach to analyse athletes in real time – as many as an entire football team simultaneously – and then direct them via headphones to improve their performance or avoid injury.

"The final goal of the project is to link a video image of the athlete with the heart rate and audio instructions from the coach so that the information can be critically analysed afterwards," Dr Gastin said.

Mr Fairweather and Mr Stokes also developed a radio telemetry ECG system that has been commissioned by the Austin Hospital for a study on rehabilitating chronic heart failure patients (see forthcoming July 2000 *Nexus*).



Victoria University bio-engineer Ian Fairweather monitors the heart rate of a contestant during the taping of Channel Nine's 'Who Wants To Be A Millionaire?'



The set of Channel Nine's 'Who Wants To Be A Millionaire?', with AFL personality and host Eddie McGuire, shortly before the taping of the March episode.

research

From crystals in space to medical research

By Barry Donovan

An American researcher whose projects have included sending crystals into space with NASA will be heading a ground-breaking new laboratory that is a centrepiece of the new Victoria Institute of Biotechnology.

Dr Lisa Harris, an X-ray crystallographer from the University of California, is an internationally renowned researcher who will provide the leadership in the Structural Biology Laboratory that was established late last year to research the three-dimensional structure of very large biological molecules, and which will be incorporated in the new institute run in partnership by Victoria University and the Austin Research Institute (ARI).

Dr Harris says the 'macromolecule' work relates specifically to the immune system, and that the research examines in detail the relationship, structure and function of medically relevant large biological molecules.

"It's extremely challenging and satisfying work and I'm delighted to

be working in Australia with the Melbourne team and looking forward to participating in the new Victoria Institute of Biotechnology. Melbourne has a well-deserved international reputation for medical research and the new institute will give Victoria another great boost," Dr Harris said.

At the University of California Dr Harris specialised in protein crystallisation. Her research focused on the three-dimensional structure and function of macromolecules involved in basic immunology, infectious disease, cancer, and organ transplantation.

X-ray crystallographic techniques were used by Dr Harris to help design drugs to alleviate symptoms of disease. During her PhD studies at the University of California, Dr Harris solved the structure of the first complete antibody and then solved the structure of a second complete antibody during her postdoctoral studies.

As Dr Harris commented lightheartedly, her work reached its greatest heights when she had a

scientific project to grow crystals in space accepted by NASA. Several Harris crystals were sent aloft on the US space shuttles Columbia and Endeavor.

Back at ground level, Dr Harris has had her research antibody structural breakthroughs featured in numerous immunology, medical and biochemistry textbooks and journals. Her research structures have been included in an educational film by *National Geographic* and two permanent educational exhibits have been established at the Ontario Science Centre in Canada and the Deusches Museum in Germany.

The three-dimensional study being carried out at the ARI and later at the Victoria Institute of Biotechnology will ultimately enhance other genetic, biophysical, and biochemical studies under way already at the ARI.

The molecules under crystallographic investigation are related to either the normal immune response during protection or to failures of the immune system in



Dr Lisa Harris: "I'm delighted to be working in Australia with the Melbourne team and looking forward to participating in the new Victoria Institute of Biotechnology."

cases of autoimmune disease, infectious disease or cancer.

This collaborative research and technology forms the first part of an integrated program to develop new treatments for disease. There

are over 40 different proteins involved in disease and normal immunity currently being studied in ARI laboratories and as part of shared work with Victoria University and the University of Melbourne.

The fossilised forecast

Fossil records help shed light on climates of the past and the future

By Ping Chew

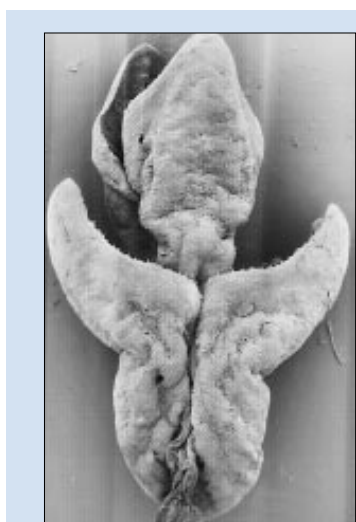
Victoria's popular ski resort and highest mountain, Mount Hotham, is covered in snow in winter. However, Mount Hotham was a lush tropical environment only about 50 million years ago, according to Victoria University palaeontologist, Dr David Greenwood.

Dr Greenwood said that as climate change is cyclical, it is important to understand the past to create models to accurately predict climate and biodiversity change in the future.

"My research using the plant fossil record reconstructs climates of the past for geological time periods when a naturally enhanced greenhouse effect had made the world much warmer than it is now," he said.

Working with collaborators from the United States, namely Dr Scott Wing from the Smithsonian Institute and Dr Lisa Sloan from the University of California, Santa Cruz, Dr Greenwood explained that their research looked at the Early Eocene period (50-55 million years ago).

"At this time Australia lay adjacent to Antarctica, yet subtropical forests flourished around what is now Melbourne. In North America, crocodiles, palms and other tropical animals and plants flourished in the interior and near the Arctic Circle, in areas where today winter temperatures can plummet to minus 30 degrees Celsius," Dr Greenwood said.



A scanning electron microscope photo of a 55-million-year-old conifer shoot from the Mount Hotham site. This conifer belongs to the modern genus *Libocedrus*, which is a rainforest tree found today only in New Zealand and Chile. The photo was taken by former VicUni student Meredith Banks.

"The closest living relatives of many of the fossil plants found in the Mount Hotham area are found only in the World Heritage rainforests of north Queensland's Daintree. These include members of the avocado and cinnamon family and rainforest relatives of eucalypts, banksias and the macadamia nut tree, as well as mighty kauri pines and treeferns.

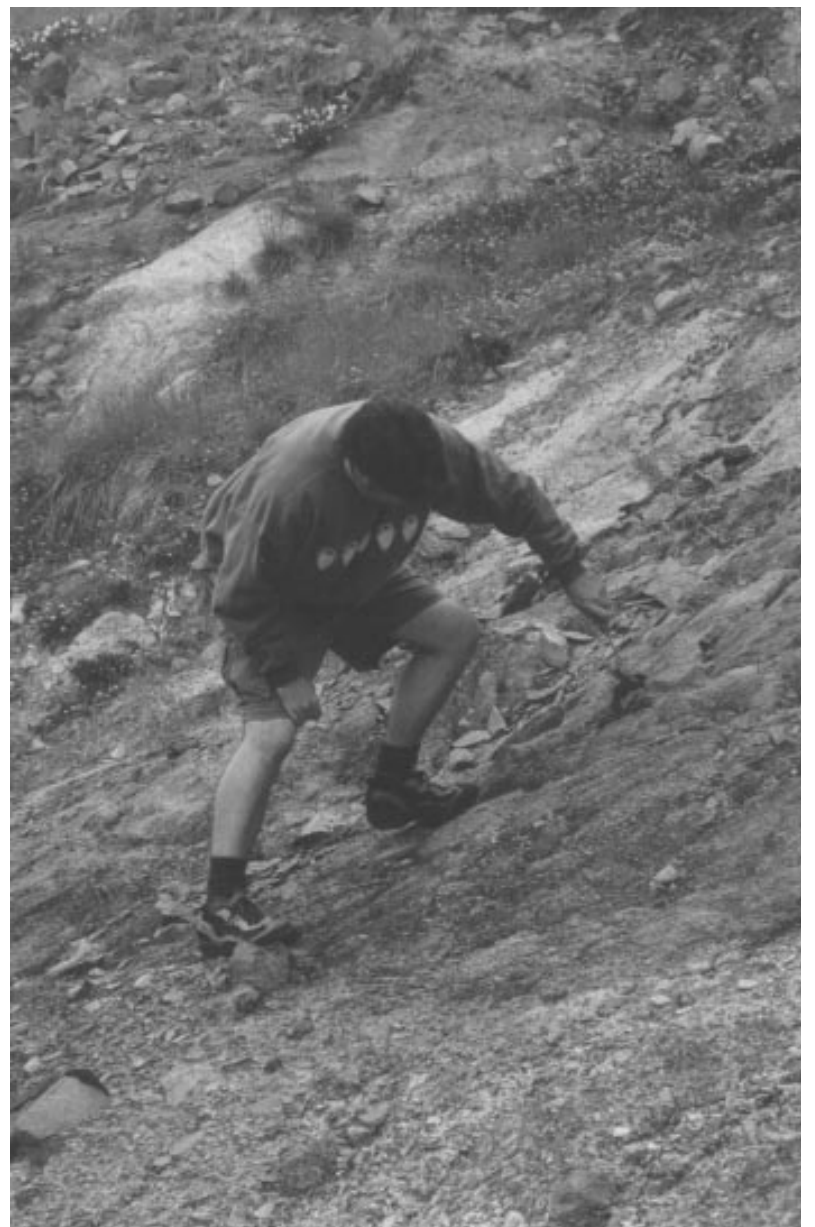
"The computer climate models used to forecast future greenhouse effect climates attempt to replicate a number of processes affecting heat and moisture in the atmosphere. The character of the natural vegetation, as

well as the nature of the landscape and the world's oceans, as much as the amount of greenhouse gases in the atmosphere, all play a role in shaping climate, today and in the past.

"Our research on the fossil record provides information on the nature of the vegetation that covered the landscape in the Early Eocene, as well as estimates of temperature and rainfall. This evidence can then be used by climate modellers, such as my colleague Dr Lisa Sloan, to refine her climate models. By creating computer models of past greenhouse climates that match the estimates of climate from the fossil evidence, estimates of future climate change due to the greenhouse effect will be made more accurately."

Dr Greenwood said that research in North America and in Australia had demonstrated that during previous times the world's climate had warmed dramatically, such as at the start of the Early Eocene period, when dramatic changes occurred in the world's ecosystems.

"In past warming episodes, many species that could not cope with the change in climate either became extinct or were forced to migrate. However, during the warm periods many new species evolved. By understanding these impacts on biodiversity, we may also be better able to plan for the consequences of humanity's grand unplanned experiment with our weather – the greenhouse effect as a result of human activity," he said.



Dr David Greenwood, pictured here at the Early Eocene plant fossil site at Mount Hotham, digging for 55-million-year-old fossil plants. The darker rock layers that Dr Greenwood is standing on contain perfectly preserved fossilised leaves and fruits.

tafe news

The juggling act

A vigorous mix of work and play

By Ping Chew

Laurie Vigor has mastered the juggling act between work and play – he simply turned his hobby into a career!

A student of the new VU TAFE Festive Arts program, Laurie said the course was an important step he took to develop his new business, now conducting juggling workshops for schools and the corporate sector.

"I surprised myself by learning to juggle, especially when I was always the one to drop the cricket ball," he said. But following a series of juggling classes at a juggling shop, he was offered the job of managing the store.

"After three-and-a-half years there, I decided it was time to move on and to develop my interest in performance," said Laurie, who enrolled in the Certificate IV in Performing Arts course.

He was attracted to the course because it taught a variety of performance subjects including music, acrobatics, street theatre, dance, circus skills and comedy, plus small business components such as publicity and marketing.

"It was a bonus that the course offered a mid-year intake, which coincided with the time I decided to leave my job. That meant that I jumped straight into the second semester where the work placement component occurred," he said.

But instead of being intimidated by being thrown into the deep end of things, he quickly established networks and contacts to build his business, which has included sport and recreation courses, a school stress-management program and similar workshops for corporations. He also got involved with the Big West Festival and even hand made a puppet and produced a puppet show for Moomba and the Melbourne Fringe Festival.

"I use juggling as a metaphor for business processes. By teaching business executives how to juggle, I am able to reinforce the importance of building on success ... that small successes, step by step, lead to big things," he said, explaining that he tailored his workshops to relate to the work of individual corporations.

"To be able to juggle, your body needs to relax. In the same way, if you are relaxed and not stressed at work, things will work out for you."

Co-ordinator of the course, Daryl Pellizzer, said the Festive Arts program was a unique course that helped students create, support and produce their own work as performing artists.

"Students learn to develop their initiative and resourcefulness, work in a team, build physical and mental focus and self-confidence," he said.

Laurie Vigor can be contacted at Tall Pigmy Productions on (03) 9517 2427.

Turning on the lights

Women are the target of a recruitment drive in the electrical trades following the launch of an innovative Victoria University training program.

VU has developed the Women's Electrical Bridging Program with the Electrical Trades Union (ETU), Victorian Trades Hall Council, VicTec and Access Training and Employment (ATEC).

The University's Workplace Studies Centre researcher, Mary Leahy, said the ETU recognised the need to build a critical mass of women to make improvements in the gender balance.

"One of the barriers to entry in the apprenticeship is the requirement to first complete a pre-apprenticeship program which is offered full time for up to six months," she said.

"The inflexibility of the training structure makes it difficult for women with family responsibilities or jobs to take unpaid time out for a period of six months. By working with the ETU, the University developed a bridging program for women interested in starting an electrical apprenticeship."

Covering basic electrical principles, familiarity with tools and techniques, and orientation into the construction industry, the new program consists of 22 four-hour evening classes.



Vigorous: "...small successes, step by step, lead to big things," Laurie Vigor says. Photo reproduced with permission of The Herald & Weekly Times Photographic Collection.

Changing course

A new VU arts program has helped a group of women return to study and change the course of their lives

By Nick Gadd

"One day I thought: 'my brain is beginning to fry with boredom,'" says Margaret Hammon, explaining why she decided to go to university at the age of 55. She had spent 12 years as a wife and mother, and 16 more as a secretary at a dairy company, when she decided she wanted more out of life.

But Margaret's lack of formal qualifications – she left school at Year 9 – posed a problem. "In those days you left school, went to work, got married and had kids."

The answer? A Preparation for Tertiary Studies (PTS) course at Victoria University was the ideal grounding for entering an arts degree program. Margaret says the one-semester course "was excellent – it gave me an idea of what I was going to be up against."

"I used to listen to FM radio instead of AM – I was waking up with the drivell!" says Margaret. While studying subjects like gambling, ethnicity and class, she discovered an interest in social issues. "Now I'm more interested in what's going on – it really opened my eyes. I read everything I can get my hands on now."

Margaret is one of many people who have overcome the odds and

returned to study through programs offered by the Department of Liberal Arts at Werribee and Footscray Nicholson Street Campus.

"The course provides an introduction to academic culture in a way that's supported," according to co-ordinator Kirsten Hutchison. "The PTS course makes explicit the skills that students need to survive at university."

Forty-three-year-old Dawne Lambourn returned to study because she wanted to help her children at school. "My older children were going through VCE and needed my help, but I had left school at Year 10."

Dawne, a mother of six, had worked in administration for the ANZ Bank before leaving to become a full-time parent. After 12 years of child rearing, she lacked confidence. "At a certain age you tend to think 'I'm too old', especially after being at home."

Dawne enrolled in PTS in mid-1999. "We learned about essay writing, note taking, researching topics and other academic skills. The course was the stepping stone to get me where I am," says Dawne.

Having completed PTS, Dawne was accepted into a VicUni Bachelor of Arts course, which she started in

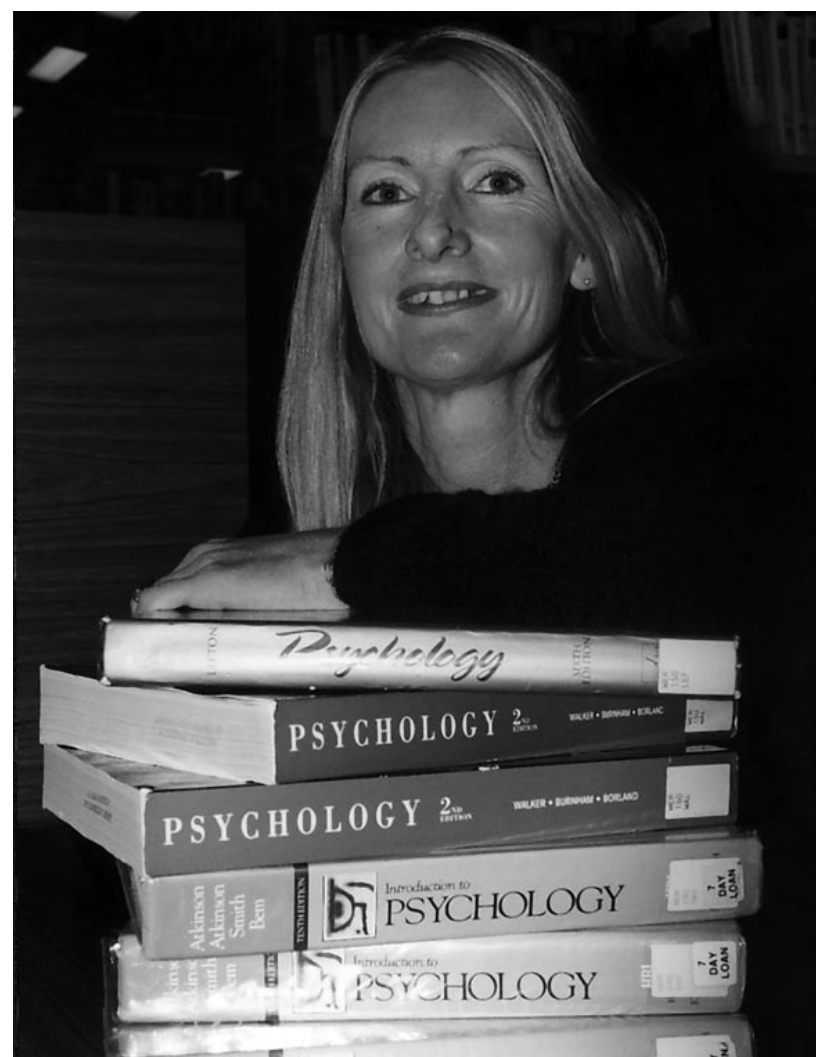
2000. She is now studying the Psychology – Science stream. There's no doubt about her commitment, although she faces the major challenge of juggling family and study. Now she aims to specialise in clinical psychology with a long-term goal of becoming a child psychologist.

"The PTS course made a difference – I feel like I'm more outgoing now, and I'm enjoying it. It has totally changed my life," she says.

Lara Farrugia is en route to fulfilling her life's dream of being a teacher, thanks to PTS. Lara had finished Year 12 without achieving the necessary marks to enter a Bachelor of Education course, so she trained for a career in office administration. A single mum with two children, she decided to return to study when she heard about PTS from a friend. According to Lara, the course was like "a huge revision".

Lara has now started a Bachelor of Education degree at VicUni and is progressing well so far. "If I'd gone straight into university, I wouldn't have been ready," she says.

Being a teacher has always been Lara's "dream job". She is sticking to her ambition although family commitments make it hard to study: "My study time is limited to when my children are asleep."



Dawne Lambourn: "At a certain age you tend to think 'I'm too old!'"

Lara's children inspired her to return to study in the first place. "One reason I wanted to go back to uni was to show my children that whatever circumstances you are in, you can fulfil your dreams," she says. "It's a lot harder for me being a mother but eventually it'll be my dream come true."

Kirsten Hutchison says the dedication of PTS students is inspiring.

"What impresses me is their dedication to learning, and the transformation I can see as they develop their individual passions and integrate study with their lives."

The Games: Part II

That big bash in Sydney is not the only party down-under

By Anthony Lynch

Imagine 4500 athletes and 1500 officials from 72 countries making their way as a fleet down the Yarra, docking near the CBD then parading through streets until they make their way into an MCG filled with 100,000 spectators.

That's Larry Sengstock's vision for the opening ceremony to the Commonwealth Games to be held in Melbourne in 2006.

A former basketball Olympian and VU graduate, Sengstock was the manager of Melbourne's Games bid and is now co-ordinating the running of the Games in six years' time. He spoke at a breakfast on 10 May celebrating the success of the Victoria University 2000 Sports School held in January.

Although 2006 might seem a long way off, Larry Sengstock pointed out that in terms of major games carnivals it's close.

"Six years goes very quickly. It was seven years ago that Juan Antonio Samaranch fumbled his way through the word 'Sydney'."

Since that announcement Sydney's Olympics have been dogged with scandals over bribery claims, ticketing fiascos, and squabbles over whose daughter should have jogged 300 metres holding a giant matchstick,

but it is worth remembering that the 1956 Olympic Games held in Melbourne were dubbed 'the friendly games'. That's a mood if not a theme the organisers of the 2006 games will try to revive.

Sengstock described Melbourne as a big city with many of the advantages of a small town. "Melbourne has all the facilities close to the city. With our bid we had the opportunity to keep it close ... there will be some new facilities, but in the majority the facilities are already there."

The new facilities include a Games village in Parkville, while existing facilities include the Melbourne Sports and Aquatic Centre, the Melbourne Exhibition Centre, Colonial Stadium and, of course, the MCG.

Sengstock said that after Melbourne lost its bid for the 96 Olympics, Ron Walker and VU graduate Campbell Rose visited 50 countries to help shore up Melbourne's bid for the Commonwealth Games and in effect got a three-year start on their rivals.

"We only had to beat the angry little dog of Wellington. South Africa and India postponed their bids when they saw ours. We had done our work early."

Sengstock is well placed to offer thoughts on the Games. Not only is he co-ordinating Melbourne's Games,

as a student of Dr Richard Baka, who introduced him to the audience at the breakfast, Sengstock wrote a major assignment on the history of the Commonwealth Games while at VU back in 1979.

The Commonwealth Games were originally the British Empire Games. The first Empire Games were held in Hamilton, Ontario in 1930 with the organisers' proviso that they "should be merrier and less stern" than the Olympics.

Sengstock admits that the profile of the Commonwealth Games has dropped over the years. There are now many other international sports carnivals and championships with which they must compete. But he's confident that Melbourne's 2006 games will be far from a fizzer.

"It is going to be a fantastic event ... it will be the greatest multisport sporting event that Melbourne has seen."

The breakfast was held to acknowledge the efforts of Sports School sponsors including Victoria Police, *The Age*, Hungry Jack's, the Melbourne Tigers and Rotary. Awards were made to coaches for the school including former Bulldog star and current coach of Coburg in the VFL Steve MacPherson, Victoria Police's Craig Spicer and VU students Peter Godden, Kate Garrett and Scott Logan.

Until the twelfth of never?

By Anthony Lynch

It's the end of the millennium. The economy is in decline. Sonya Gore owns a second-hand bookstore wedged between a funeral parlour and a brothel. The funeral parlour and brothel both do a better trade than the bookstore. Sonya is behind in her rent and her loan repayments. The bank is closing in. Sonya smokes so heavily one customer can smell it in her books. A shadowy acquaintance offers to relieve Sonya of her books and her financial woes with the help of "a real pro" whose speciality is fire.

Meanwhile an unknown admirer sends Sonya handwritten dialogues between writers and thinkers as diverse as Plato and Homer, Marx and Moses, Cervantes and Jorge Luis Borges. Sonya recognises herself as a character in each of the dialogues. They appear like missals of love from someone who knows and shares her reverence for the written word. She can't help but think they offer her salvation.

Victoria University academic Tom Petsinis' new novel *The Twelfth Dialogue* tackles some big issues, and follows the success of his 1998 novel *The French Mathematician*. Like that book, *The Twelfth Dialogue* picks up on themes of the pursuit of love, the passion of ideas, and the comfort of order versus the anarchy of disorder. Books stack neatly on shelves, but so easily burn. Ideas shape our world but can also destroy.

In launching the book at Readings in Lygon Street on 10 March, *Eureka Street* editor Morag Fraser described it as "anarchic yet contained", "a kind of mystery tale ... a series of 12

dialogues, the last 'written on the body' as we say now."

She went on to describe the work as "a great and generous book ... It takes very seriously the idea that some things are sacred, yet it takes nothing for granted."

The novel itself is neatly ordered. It is broken up into twelve parts, each containing one dialogue. Yet throughout the novel the precedence of the written word, and the survival of books themselves, remains problematic.

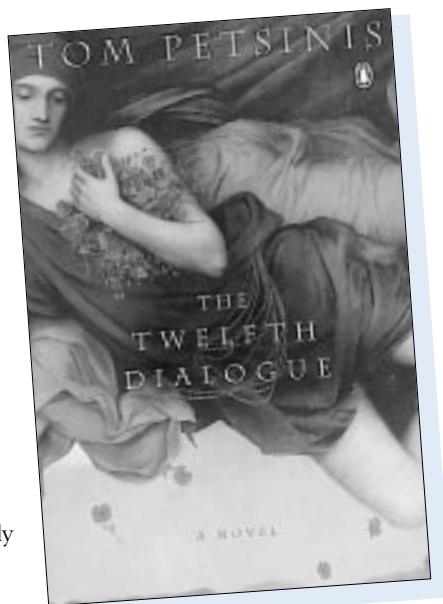
In many ways it is a book about books, as is made apparent not only in the bookshop setting but also in dialogues such as that between Cervantes and Borges, with Cervantes troubled at being left behind by his own creation.

The setting for *The Twelfth Dialogue* suggests Melbourne but could be anywhere in the English-speaking world. At the launch Tom Petsinis made clear his resistance to any notion that as an Australian writer his novels must be set in Australia.

"Writing is writing about the world. There is no reason why Australian writers cannot tackle any theme. We are products culturally and intellectually of the European tradition."

He said *The Twelfth Dialogue* is very much a book about love and obsession.

"Sonya relates to the world via the text. The letters she receives are epistles of salvation for her. The book and the text infiltrate her subconscious." In turn the text



"celebrates books, reading, and the passion of reading."

Although a novelist, poet and playwright, Tom Petsinis' other passion is mathematics – in which he lectures at VU. And maths does raise its head in the novel. The young protagonist of *The French Mathematician* Evariste Galois crops up again in the Paul Verlaine–Arthur Rimbaud dialogue. Books function like mathematics in ordering the world. Goethe says of Pythagoras that "he who has mathematics has religion". And the "primal point" of the silicon chip threatening Sonya's books evokes the "singular point" representing the geometrical problem and the bullet that ends the life of Galois in *The French Mathematician*.

The Twelfth Dialogue is published by Penguin Books, rrp \$17.95.

VicUni Events Calendar

Conference

Partnership for Growth: Australia-Thailand Food and Beverage Trade and Investment in the New Environment

Organisers: Key Research Area in Integrated Food Value Chain (Victoria University) and the Australia-Thailand Business Council
Date: Friday, 14 July
Venue: City Flinders Campus, 300 Flinders Street, Melbourne, Level 12, Conference Room 1
Contact: Alison Smith or Angelina Rizk on phone (03) 9248 1054, email Angelina.Rizk@vu.edu.au or fax (03) 9248 1021; or Bill Northausen on phone (03) 9248 1166

\$45; unemployed/pensioner/concession: \$10; students: \$5 donation with ID
RSVP: Usha Sukumaran on 9688 4144

Research Commercialisation and Industrial Liaison

Organiser: Victoria University Office for Research
Presenter: Ray Wood, Irendos Pty Ltd
Dates and venues: Footscray Park Campus, Ballarat Road, Footscray, Building M, Room 4, Level 4, Friday 2 June, 3.00 – 4.30pm; Werribee Campus, Hoppers Lane, Hoppers Crossing, Conference Room B01, B Wing, Building 1, Friday 9 June, 9.00 – 10.30am
Contact: Elaine Cox on phone (03) 9688 4705 or email elaine.cox@vu.edu.au

Seminars

Researching Ethics in Micro and Home-based Business

Organiser: Victoria University Business Ethics Research Unit (BERU)
Date: Thursday, 1 June
Time: 12:30pm
Venue: Building G, Meeting Room G417, Footscray Park Campus
Presenters: Dr John Breen and Dr Stuart Dawson
RSVP: Betty Zoppos on phone (03) 9688 5348 or email Betty.Zoppos@vu.edu.au

Leadership and the Environment

Organisers: School of Life Sciences and Technology
Speaker: Peter Garrett, president of the Australian Conservation Foundation
Date: Friday, 2 June
Time: 11am – 12 noon
Venue: Victoria University St Albans Campus, McKechnie Street, St Albans, Building 3, Room 3C42
Contact: Russ Swann on (03) 9365 2641

Victoria Switched Off?

Organiser: Workplace Studies Centre
Speakers: Andrea Sharam/John Dick, Energy Action Group; Professor Geoffrey George, head, Legal and Executive Studies, Victoria University
Date: Thursday, 1 June
Time: 5.30 – 8.45pm
Venue: Conference Centre, Level 12, City Flinders Campus
Cost: Waged/organisations:

Music at Melba

Free lunchtime concert at Victoria University affiliate, the Melba Memorial Conservatorium of Music, 45 York Street, Richmond:

Wednesday, 31 May, 1.10pm

Sylvie Leprohon (flute), Elyane Laussade (piano): works by Taffanel, Muczynski and Boehm.

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Xanana Gusmão opens office at VU

cont'd from page 1

support the East Timorese people with the office base but that further assistance was required from Australian supporters of the East Timorese to assist with office staff salaries and daily running costs.

"The establishment of this office at Victoria University's City Flinders Campus in the heart of Melbourne is a concrete example of continuing Australian support for an independent East Timor," Professor Hamerston said. "I am sure that Victorians in particular will respond to a call for additional financial and physical support to help the office run effectively in the months and years ahead."

The Deputy Premier, John Thwaites, said that the Victorian branch of the Labor Party had supported the struggle of the East Timorese people for independence for many years. "I am honoured today on behalf of both the Labor Party and the people of Victoria to acknowledge the successful independence outcome achieved by Xanana Gusmão and the East Timorese, and commend Victoria

University for its assistance in establishing the Melbourne office."

The Lord Mayor of Melbourne, Councillor Peter Costigan, speaking at the Victoria University opening of the CNRT office, said that Melburnians had forged strong links with East Timor over the years and "it gives me great pleasure to welcome for the second time to our city this great freedom leader Xanana Gusmão."

To assist with efficient fundraising, an East Timor Emergency Trust Fund has been established to direct fundraising activities according to the priorities of the National Council of Timorese Resistance Commission for Emergency, which is chaired by Xanana Gusmão.

Members of the committee are David Scott, AO, Victoria University's Dr Richard Chauvel, the Hon. Jean McLean, Etervina Groenen, Stephen Lavender, Raul Mousaco and Peter McMullin.

The co-ordinator of the new CNRT office at Victoria University is Abel Guterres.



Xanana Gusmão with radio personality and journalist Romana Koval and Julie Copeland.



Xanana Gusmão chats with members of the audience after the launch.

Xanana Gusmão with VU Council member Jean McLean.



GASS blast for science crowd

The Great Australian Science Show (GASS) 2000 was a blast, full of energy and hands-on science, according to liaison officers from VicUni's Faculty of Engineering and Science, Santa Giordano and Nick Athanasiou. The show took place on 5-8 May at the Melbourne Exhibition Centre.

"VicUni's stand 'Icky's Experimental Wonders' went down well with the crowds," they said. "The stand was completely interactive and provided a full-on science show. Students and families were invited to make small motors and electromagnets, balloon-powered

cars that demonstrated Newton's Third Law of Motion – 'Every action has an equal and opposite reaction' – and model volcanoes that demonstrated chemical reactions."

Other activities included experimenting with large bubble films and bubbles (fluid dynamics and osmosis), being part of a magic eye picture and understanding the nature of the western region's fragile wetlands environment.

"The VicUni stand was successful at allowing families to experience science hands on. Science is everywhere – that's the message we wanted to get

across," Ms Giordano and Mr Athanasiou said.

"Many staff and students helped at GASS 2000 – special thanks to Foster Hayward from the School of Communications and Informatics for his long hours and motivation."

Far left: Meaghan Keating, aged 5, of Mont Albert creates a balloon-powered car. And below (l-r): watched by elder brother Leigh, six-year-old Dion Kitbaridis road tests the balloon-powered car; four-year-old Rebecca Parish of Brighton finds making a volcano a sticky business; and seven-year-old Jasper Aral constructs a battery-operated motor.

