

LA TROBE UNIVERSITY

Bulletin

MAY 2004

THE **BIG** BREAK
GETTING IT ALL TOGETHER

*New Refugee
Health Centre*

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Cover:
Bones on the mend,
see story page 7.

Image: Getty Images

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LIBRARY SERVICE SPEEDS RESEARCH

Research in Australian universities has been made easier with a new web-based service that enables postgraduate scholars and university staff to obtain books and documents more simply and quickly from their campus libraries – and from libraries in Australia and overseas.

La Trobe University is one of the first in Australia to launch the new interlending and document delivery system, the result of an Australian Vice-Chancellors' Committee project that oversaw development of the software for the new system during the past ten years.

The University Library has implemented Fretwell-Downing Informatics VDX (Virtual Document eXchange) software as a member of a consortium of several Australian university libraries.

La Trobe University Deputy Librarian, Barbara Paton, served as Chair of the VDX Users Group for Australia and New Zealand.

The service was launched recently at La Trobe University's main Melbourne campus at Bundoora by Vice-Chancellor, Professor Michael Osborne.

It has been implemented at La Trobe University libraries in Albury-Wodonga, Bendigo and Bundoora and can also be accessed by eligible staff and students at all other campuses, as well as from off campus and offshore.

Professor Osborne says La Trobe University has always had an innovative approach to its library and has been to the forefront of many new library developments.

'It is another step forward in the important task of making access to information more easily and widely available.'

The service gives details of the holdings of libraries across the world and enables access to the University's own library catalogue as well as the catalogues of the National Library of Australia and the US Library of Congress – all via a single web page.

It automatically tracks and reports on the availability and status of requests and then generates email alerts to advise scholars that documents are available on their desktop, or that books have arrived from lending libraries.

The significance of the service for Australian libraries can be gauged from the fact that, for example, last year there were requests for 19,000 items for external library and document supply services from La Trobe staff and students alone. La Trobe supplied about 12,000 items from its collections to other libraries.

As well as improving resource sharing between the research libraries and state libraries, the system helps libraries manage their interaction with users and organisations supplying documents. ■

Deputy Librarian, Barbara Paton.



New Centre promotes refugee health

La Trobe University has established a new research centre in refugee health.

Based in the Faculty of Health Sciences on the main campus at Bundoora, the Refugee Health Research Centre (RHRC) is an innovative partnership between the University and the Victorian Foundation for Survivors of Torture.

The Foundation is a non-profit community organisation which provides support and services for many of the 100,000 refugees currently in Australia who have fled torture, persecution and trauma in their homeland during the past ten years.

The RHRC has been set up to promote the health and well-being of refugee communities through activities ranging from research and teaching to continuing education and professional development.

The Centre has four priority areas for research: young people, refugee protection, newly emerging communities and service innovation and community strengthening. It will also examine growing problems of global displacement of populations and the abuse of human rights.

Launched late last year by the Victorian Minister for Health, Bronwyn Pike, its Director is Professor Sandy Gifford, a former foundation member of the University's Australian Research Centre in Health, Sex and Society. Professor Gifford comes to La Trobe from Deakin University and has taken up a Personal Chair in Public Health.

With its close links to refugee policy and practice, Professor Gifford says the RHRC is well placed to contribute to this much needed field of multidisciplinary research and practice.

One key study is already under way. Funded by VicHealth and co-ordinated by Ms Christine Bakopanos, it focuses on 200 newly arrived young people, aged from 13 to 18. They are being recruited through

English language schools and through the Foundation's early intervention programs within the first three months of their arrival in Victoria. They are then followed over five years to 2008, to identify social determinants of health and well-being

ceremony, their profession in health and healing is about 'making this world a better place'.

With support from La Trobe Dean of Health Sciences, Professor Stephen



Professor Gifford, right, with Research Fellows Dr Correa-Velez and Ms Bakopanos.

during settlement. Professor Gifford says virtually no research has been carried out into how to develop, implement and evaluate programs and policies aimed at young people from refugee backgrounds.

An important outcome of her study will be to identify the key issues of concern when they enter mainstream schools and then move into higher education or the workforce, and the ways in which they can be supported by schools, families, and youth and community services.

Professor Gifford's work takes her into the deepest abyss of inhumanity. She regularly deals with people who have 'experienced torture, trauma and dislocation in ways that are difficult to imagine – or even think about,' she says. Her previous work, as a medical anthropologist in India, dealt with HIV/AIDS prevention and care.

However, every day she goes home full of optimism. Why? Because, as she reminded students at a recent graduation

Duckett, and the Director the Victorian Foundation for Survivors of Torture, Mr Paris Aristotle, she has been able to fulfil her vision of establishing the Centre to try and improve the lives of refugee and torture victims.

She believes health workers have an obligation to work with purpose and hope, qualities, she concedes, that can be difficult to sustain in a 'precarious world where more than 20 million people fall under the mandate of the UNHCR as refugees; where over 40 million people are living with HIV; where someone in the world is newly infected with TB bacilli every second and one-third of the world's population is living with this disease – and where there are at least 70 million landmines in 90 countries, killing or injuring at least 20,000 civilians every year.

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ABC goes 'wild' at La Trobe

Two ABC radio and television personalities – Lynne Haultain, 774 ABC Melbourne radio presenter, and Richard Morecroft, ABC television *Wildwatch* host – broadcast live to air from La Trobe University's Melbourne Wildlife Sanctuary recently as part of a radio program launching the ABC's 'Wildwatch' conservation campaign.

Wildwatch, an interactive survey project, uses the ABC's Australia-wide radio, television and new media coverage to assess the status and promote the importance of wildlife in gardens around Australia. *Wildwatch* says with more than eight out of every ten people in Australia living in urban areas, these backyard landscapes need to be managed for wildlife just as natural areas are.

The 774 ABC Melbourne broadcast featured interviews with the organisers of the national survey as well as La Trobe staff and scientists who have been involved in urban wildlife research and restoration projects.

La Trobe University's 120 hectares of wildlife reserves are leading examples of such restoration. During the past 30 years they have helped train many people working in this field throughout Australia.

The reserves comprise woodlands, wetlands and the Melbourne Wildlife

Sanctuary, a conservation research and education facility managed by La Trobe University with support from the Gould League, Melbourne Water and public donations.

The Sanctuary also provides its expertise to the community. It runs an indigenous plant nursery and designs and sells bird nesting boxes and 'lizard lounges' suitable for attracting and keeping backyard wildlife.



Lynne Haultain interviews Mr Paras at the University's Melbourne Wildlife Sanctuary.

The ABC says *Wildwatch* includes tips about how to make gardens wildlife friendly and improve urban habitats. It is also gathering information for a national

data base that can be used by conservation bodies, universities, planners and research organisations as a 'snapshot' of wildlife in gardens, mapping trends and attitudes as well as using the data for conservation planning.

La Trobe University's Chancellor, Emeritus Professor Nancy Millis – one of Australia's most distinguished biological scientists – is Patron of the Melbourne Wildlife Sanctuary. She welcomed the 'Wildwatch' campaign and took part in the radio program.

Former Chairperson of the national Genetic Manipulation Advisory Committee, Professor Millis now chairs the Research Advisory Committee of the

Murray-Darling Freshwater Research Centre and holds other top posts in the fields of conservation, ecology and environmental sciences. ■

NEW CENTRE PROMOTES REFUGEE HEALTH

Continued from page 3

'It is especially important to be engaged in the world at this point in time.'

Her aim is to develop the RHRC into 'a leading internationally recognised research centre in refugee health studies in the Asian Pacific region'.

Professor Gifford says the Centre aims to have between 10 to 15 staff, comprising research fellows, research assistants, community liaison officers as well as management and administrative personnel.

The most recent Research Fellow appointed is Dr Ignacio Correa-Velez. A Colombian medical graduate and specialist

in family medicine and community health, he comes to the Centre from the University of Queensland where he undertook his PhD on complementary and alternative medicine and its impact on the quality of life of cancer patients. More recently he explored traditional healing practices among refugee communities in Brisbane.

Professor Gifford is establishing collaborative research links across the Faculties at La Trobe and with other academic institutions in Victoria, Australia and the Asia Pacific region.

She says the RHRC will provide professional development and research

training and short courses for health professionals including general practitioners, nurses and social workers. It will conduct summer schools in refugee, health and settlement studies, and deliver a special stream within La Trobe's Master of Public Health program, for on and off campus delivery.

'We will also develop research and training specifically for people from refugee backgrounds. Culturally diverse, these activities will draw on refugee experience and make important contributions to the ongoing work of the RHRC.' ■

New building for Albury-Wodonga campus

The Victorian Treasurer and Minister for State and Regional Development, Mr John Brumby, recently turned the first sod to mark the start of a new building on the La Trobe University Albury-Wodonga campus.

The Centre for Research and Training in Environmental Sciences is scheduled for completion early in 2005. The new building will house The Murray-Darling Freshwater Research Centre (MDFRC) as well as specialised University facilities.

MDFRC will occupy 90 per cent of the single storey building and the remainder will consist of teaching laboratories for La Trobe students studying courses within the Department of Environmental Management and Ecology.

Vice-Chancellor, Professor Michael Osborne, said the co-location of MDFRC with the University will offer outstanding research opportunities and enhance the unique educational programs of the Department of Environmental Management.

'La Trobe, CSIRO and the MDFRC already have a strong relationship through collaborative research projects and the

development of a joint research facility at La Trobe University's Mildura campus,' Professor Osborne said.

Professor John Langford, Chairman of the MDFRC Board of Management, said the collaboration between the University and researchers at MDFRC will draw together expertise from both organisations to facilitate important research in the Murray-Darling Basin.



Mr Brumby, centre, with, from left, Professor Langford, Professor Osborne, Albury-Wodonga Campus Director, Professor John Hill, and Ms Sophie Panopoulos, MP, Member for Indi.

'Both organisations are grateful for the contribution of \$1.5 million towards the project from the Victorian Government

Regional Infrastructure Development Fund, administered by Minister Brumby, \$1 million from the Federal Government through the Minister for Environment and Heritage and \$450,000 from CSIRO,' Professor Langford said.

The Murray-Darling Freshwater Research Centre is an unincorporated joint venture between the Murray-Darling Basin Commission and CSIRO Land and Water, with support from the Department of Agriculture, Fisheries and Forestry.

The 1350 square metre brick building will be constructed by Zauner Construction of Albury. The architects are Woods Bagot Pty Ltd of Melbourne.

The new building is the second major construction project on the campus in two years. The David Mann Library was opened in 2002 and won the

Royal Australian Institute of Architects' Regional Prize. The architects were also Woods Bagot. ■

Clinical Nursing School opened at Bendigo

LA TROBE UNIVERSITY BENDIGO has joined with the Bendigo Health Care Group – the largest employer of nurses in the region – to develop a Nursing Clinical School.

The move strengthens Bendigo's position as a regional leader in postgraduate education and research and is aimed at specialist fourth-year undergraduate and postgraduate students.

Professor of Clinical Nursing at La Trobe University Bendigo, Ruth Endacott, says the new School offers students the best of both worlds, by bringing together university learning and the application of clinical skills, and offering opportunities for clinicians and academics to work closely together.

Bendigo Health Care Group Chief Executive, Kathy Byrne, describes the opening of the new Clinical school as a 'progressive approach to health care education and research which demonstrates the commitment of both organisations to developing the nursing workforce'. She says the School compliments Bendigo Health Care Group's other clinical teaching initiatives which already include La Trobe physiotherapy.

The partnership has resulted in external funding from the Nurses Board of Victoria. A research grant has been awarded to Professor Endacott and Greg Spiers, ICU manager, to explore how critically ill patients are identified and managed in medical and surgical wards. ■

Honours for La Trobe scientists

La Trobe Chancellor, Emeritus Professor Nancy Millis, and the Director of the University's Centre for Environmental Stress and Adaptive Research, Professor Ary Hoffmann, have been elected to the Australian Academy of Science.

And eminent La Trobe biochemist, Emeritus Professor Bruce Stone, is one of 17 Australian scientists presented with Citation Laureate awards by the American company Thompson ISI, a provider of website information.

Professors Millis and Hoffmann were



One of Australia's pre-eminent researchers in microbiology, Professor Millis has been Chancellor of La Trobe University since 1992. She co-wrote the first biotechnology textbook and taught the first biotechnology course in Australia.

She also oversaw the introduction of genetic engineering into Australia, monitoring safety and ethical issues surrounding the science of genetically modified organisms.

In addition, Professor Millis was instrumental in fostering the study of



From left, La Trobe Chancellor Millis and Professor Hoffmann.

among 20 of Australia's leading scientists – from 11 Australian universities, CSIRO and medical research institutions – honoured by the Academy recently. Election to the Academy recognises a career that has significantly advanced, and continues to advance, world scientific knowledge.

Generally, the Academy of Science elects each year 16 scientists to the Fellowship. In 2004, to commemorate its 50th anniversary, it elected an additional four Fellows.

Professor Nancy Millis was one of two 'Special Elections' of eminent Australians who the Academy said had 'rendered conspicuous service to the cause of science or whose election would be of signal benefit to the Academy and to the advancement of science'. She was elected for her efforts to increase 'public awareness of science'.

fermentation technology in Australia. Her specialties are in waste-water treatment and industrial microbiology where she has led research into improving the environmental effects and degradation processes on natural mud and wastes.

Professor of Genetics and Director of the Centre for Environmental Stress and Adaptive Research (CESAR), Professor Ary Hoffmann has a world reputation in the field of genetics and evolutionary biology.

As director of CESAR – an Australian Research Council-funded special research centre – Professor Hoffmann brings together the skills and expertise of participants from La Trobe, Melbourne and Monash universities.

CESAR's mission is to understand the way organisms respond and adapt to changing and stressful environmental conditions, and to disseminate this information to industry and community

groups, aiming to meet these objectives by performing research in three core areas, climatic stress, chemical stress and monitoring environments for stress.

Emeritus Professor Bruce Stone of La Trobe's Department of Biochemistry has received an Australian Citation Laureate award for his contributions to agricultural science.

Those receiving the Citation Laureate awards were selected on the basis of the number of times their research papers have been cited by other researchers – an accepted objective way of measuring the impact an individual has.

His laboratory's primary research areas involve improvements in grasses and cereals. He has contributed significantly to the fundamental understanding of the structure of complex carbohydrates, especially complex lignin and the effect this has on the digestibility of fodder plants by ruminants. ■



Emeritus Professor Bruce Stone

Water research award

La Trobe University student, Sarah Daniell, who is studying the seed bank viability of flood-plain Murray River wetlands from Lake Hume to Barmah, is the inaugural winner of the \$5,000 Terry J Hillman Honours Scholarship, administered by the Murray-Darling Freshwater Research Centre. Ms Daniell completed her Bachelor of Science degree in Environmental Management and Ecology last year. ■

Bones on the mend

Research into fractures and bone disease reveals there may be a better way to heal.

Bio-scientists at La Trobe University have made advances that may lead to better ways of repairing fractured bones and treating bone diseases such as osteoporosis.

The University's Skeletal Biosciences Group in the Department of Human Physiology and Anatomy is following two parallel lines of research into the action of the nervous system on fractures, skeletal disease and skeletal function.

Team leader, Dr Brian Grills, a senior lecturer in Pathophysiology, said that a long-term possible outcome could be a drug that would stimulate smooth muscle contraction, resulting in improved fracture healing and bone disease treatment.

The first of the two lines of research, into the properties of a neuropeptide called Galanin, began three years ago. Researchers in a number of institutes worldwide, investigating the properties of Galanin since its discovery two decades ago, have found that Galanin plays a role in normal growth and development of the nervous system and that it is critically important for recovery of nerve function after nerve injury.

La Trobe's Skeletal Biosciences Group has advanced this line of research with the discovery that Galanin is produced in increased quantities in bone fractures.

'Galanin is a natural suppressor of pain and is involved in other physiologic functions. As far as I am aware, our team is the first to look at the effects of Galanin on the skeleton,' Dr Grills said.

'We have found that Galanin is associated with skeletal cell regulation, particularly cell division and that it is also able to increase bone formation. This last property implies that Galanin promotes fracture repair.'

Dr Grills with his colleague, Dr John Schuijers, their PhD students, Mr Aaron McDonald and Ms May Yao, and in collaboration with researchers from the University of Melbourne's Howard Florey Institute, Drs Pei-Juan Shen and Andrew Gundlach, have recently published a report

on their progress on Galanin research in the international skeletal journal, *Bone*.

The second line of research is the identification of two previously unknown aspects of bone fracture repair – the presence of smooth muscle-like cells in tissue that links fractured ends together (callus) and the process of fracture site contraction.

Working with La Trobe University muscle physiologist, Dr Philip Dooley and

These smooth muscle-like cells, contained the contractile protein called 'alpha smooth muscle actin'.

'We showed that callus has the ability to contract and relax in physiologic solutions. These findings are significant in that contraction of fracture callus, like soft tissue wounds, should aid repair and that fracture repair may be affected by agents that influence smooth muscle contraction or relaxation.

Dr Grills, left, with Mr McDonald, Dr Schuijers and Dr Dooley.



Honours student Melissa Howgate, Dr Grills discovered that tissue formed in the first few weeks after the fracture that links the fractured ends of bone together is primarily composed of smooth muscle-like tissue.

'This tissue has the amazing ability to contract and relax, just like ordinary muscle. Contraction of new healing tissue is an essential event in early soft tissue repair, as contraction aids healing by bringing together the edges of the wound, thus reducing the amount of tissue needed for repair and restoring internal tissue tension to the wound.'

'In theory it may be possible to develop a drug that stimulates this smooth muscle contraction and thereby hastens fracture repair,' Dr Grills said.

In March Dr Grills was an invited speaker on this research at the International Society for Fracture Repair Meeting, attended by eminent scientists, endocrinologists and orthopaedic surgeons from many countries at Clare, South Australia.

A paper on the research is due for publication this year in the world's leading orthopaedic research journal, *The Journal of Orthopaedic Research*. ■

RICE, BUFFALO, and the history of Chinese food

A La Trobe University researcher is vying with other archaeologists to be first to pinpoint the timing of one of the great agricultural technical revolutions of all time. Science writer, Noel Carrick, reports.

number of researchers attempting to unearth the answers.

According to Dr Liu, examination of different evidence from a range of sources raises more questions than answers. But at least her investigations in many parts of China have put to rest a number of false assumptions. Dr Liu has examined a range of buffalo bones of several species from

found together. No such site dating before the third or fourth century AD has been found. The fact that rice was first domesticated in China and that buffalo bones were found together with rice remains in Neolithic sites in China led archaeologists to theorise that the Chinese domesticated one or more of many native species of water buffalo sometime during the fifth millennium BC.



This is one of the theories Dr Liu has disproved. She believes that the native species were never domesticated and that the buffalo used in agriculture came from elsewhere – possibly imported via the south-western Silk Road. This was an alternate route starting from South China via India, Central Asia to the Middle East and the Roman world to the northern Silk Road which went from North China via central Asia.

No evidence of native buffalo has been found in China during late historic times, and the various species, now all extinct, were not related to the species still used in many areas to plough rice paddies.

The first evidence linking buffaloes, ploughs, and rice paddies occurs on a ceramic model found in a tomb in southern China dating from AD 286-321. Dr Liu believes this technology was most likely brought to South China by people who migrated from North China to escape political-economic turmoil at the time. The domestic buffalo used in rice paddies was probably the result of a technological transformation from cattle-ploughing in dry-land regions to buffalo-ploughing in wet-rice paddies.

When did the Chinese domesticate water buffaloes – or import domesticated animals from elsewhere – and harness them to ploughs to cultivate rice paddies?

The origin of the working water buffalo, which for hundreds of years has played a vital role in wet rice production in southern China and Southeast Asia, and the timing of its domestication, remains one of the great unknowns of Chinese history and archaeology. La Trobe University lecturer in Archaeology, Dr Li Liu, is one of a

dozens of archaeological sites in both north and south China, the remains of ancient bronze ‘ploughs’ and figurines, and ceramic models depicting agricultural scenes in a quest for the ‘magic combination’ that might shed light on the mystery.

The quest is to find the earliest archaeological site in which three prime ingredients – buffalo bones or other buffalo remains, evidence of ploughs, and the remains of rice or rice paddy – are all

WATER d production

She believes there is a possibility that rice cultivators may have used these beasts to trample rice fields in some regions in ancient China. This method still exists today in Southeast Asia. But it remains to be investigated when and where this technique was first used, and how it may have been related to the development of ploughing. ■



Dr Liu in her archaeology laboratory.



Software testing THERE'S AN EASIER WAY

A La Trobe University software engineer believes she may have resolved a problem that has plagued the computer industry since its inception.

PhD student and sessional lecturer in Computer Science and Computer Technology, Ms Tafline Murnane, has devised a new model to describe software testing methods.

She believes the model will change the way software testing is taught and may change the way software testing methods are described in text books on testing.

As part of her research for her PhD thesis, Ms Murnane has created the model to make software testing methods easier to learn, use and compare against each other.

She explains that many text books used in software testing and reliability courses were written 20 years ago and are still used because the methods have not changed significantly.

'We did not realise there were so many "holes" in the text books where they describe testing methods. Because of this, the methods can be difficult to learn as a number of steps tend to be left out of each text book description of the methods.'

Ms Murnane calls her new model the TCGM Model, which stands for the Test Case Generation Model, as it relates to the generation of test cases.

'Currently, when software testing methods are described in text books, each one is described differently. I searched the literature and was unable to find anything relating to how testing methods could be described in ways that make them easier for students to learn.

'Of eight testing methods I have researched, all are described differently and this makes it difficult not only for students to learn, but also for practitioners using the

methods in industry. The TCGM Model gives all testing methods the same look and feel, which will help teachers, students, researchers and industry practitioners.

'If you look at the ingredients lists of packet or processed food, they are all structured the same way. Because of this you don't have to learn a new method of reading the lists for each different food. That is not the case with software testing methods, as you have to learn a different way of representing the methods for each new method you learn. To overcome this, I devised this standard model for describing software testing methods.

'In addition, the model also makes testing more flexible. Essentially, software testing methods consists of different sets of rules for selecting test data. The model describes the test selection rules independent of the methods they were derived from, so that if an industry practitioner wants to generate a test case, instead of applying an entire testing method, they can use just those rules that apply to their particular problem domain.

'The model is a more practical alternative to current testing methods, because each test can be customised to the specific needs of the tester or organisation,' Ms Murnane said.

Professor Karl Reed and Dr Richard Hall are supervising Ms Murnane who is doing her PhD at La Trobe on a Victorian State Government ITC Scholarship and a scholarship from the Department of Computer Science and Computer Engineering. She worked in industry as an analyst programmer after completing her degree in Computer Systems Engineering at La Trobe in 1999. ■

CAN YOGA HELP CURB BINGE EATING?

La Trobe University researcher Mr Shane McIver hopes to ascertain whether yoga can prevent or reduce binge eating.

Conducting research for his PhD thesis, supervised by Dr Paul O'Halloran of the School of Public Health, Mr McIver sought to recruit 80 overweight or obese women who binge eat.

'I was quite overwhelmed by the number of women interested in participating after the project was publicised in the media. In the three weeks after the item ran in several newspapers, more than 300 women made contact,' Mr McIver said.

'While there has been considerable investigation of other aspects of eating disorders – particularly anorexia and bulimia – relatively little research has been

done on binge eating which is a very serious problem. Previous research points to the fact that about 30 per cent of women participating in various weight control programs are binge eaters.'

Mr McIver defines binge eating as an out-of-control eating pattern, including the urge to eat when not hungry. It might not have anything to do with hunger or a real need for food.

'Binge eaters go into a "transformational trance" in which they use food as a buffer zone between themselves and how they really feel. As long as they are bingeing, they tend to block out thoughts about what's going on and how they feel. Even though they are full, eating more maintains the thought "blackout".'

'I should make it clear that not all binge

eaters are overweight or obese. Genetics and other factors can play a role in preventing some binge eaters from gaining excess weight.'

Mr McIver is conducting a randomised control trial using pre and post test measures. He has divided his participants into two equal groups. One will undergo a 12-week yoga program while the other women, acting as the control group, will continue their usual eating and exercise pursuits.

The intervention group will undertake yoga sessions for one hour each week for 12 weeks after which the effects will be compared to the control group.

Mr McIver says the project will explore the results of the yoga program in two ways: one examining the results of the meditation aspect of yoga (eating mindfully) and the second the results of the physical aspect (hatha yoga).

Binge eaters go into a 'transformational trance'

He wishes to explore whether meditation changes the experience of bingeing. The aim is to discover if, through the development of increasing awareness, members of the intervention group will become more conscious of what they are doing when they eat, as well as when they are tempted to binge eat, and if this leads to a reduction in bingeing behaviour.

'We want to learn about what happens when the constant urge to eat is not placated, and if it diminishes. Early evidence from a similar pilot study indicates positive findings, with significant decreases in binge episodes and depression scores.

'The second aspect of the project is to determine the effect of classical hatha yoga, which is the physical exercise component of yoga. For many women, there is a love-hate relationship towards exercise. It's difficult to find a way to exercise that is non-competitive or void of body image issues. The model presented here is exercise where you can enjoy your body more and worry about it less. In turn, this might lead to increased participation in other activities.' ■



REMPPLAN 'tool' helps regional communities

WHAT HAPPENS to a regional economy when an industry shuts down, government or business services are withdrawn, or a new industry moves in?

How is globalisation impacting on regional towns and cities or new government policies?

Until now, it has been difficult for communities and regional planners to accurately and quickly predict the economic impact of real or proposed changes and take action to meet those challenges.

La Trobe University's Centre for Sustainable Regional Communities (CSRC) at Bendigo is providing a helping hand.

The CSRC has developed an Australian first – a user-friendly economic modelling tool called REMPLAN that is giving communities information about their economies that has not been available at the regional level before.

Developed by CSRC Principal Research Fellow Ian Pinge, the REMPLAN software tool has been welcomed by regional communities with subscribers located across Victoria, New South Wales, Western Australia and the list is growing.

CSRC researcher Mr Matthew Nichol said a major strength of REMPLAN was its ability to provide the 'big picture' of a particular regional area.

'Planners can easily identify and anticipate the direct, or indirect, effects of change in terms of output, income, employment, imports and exports.

'The key to a sound economic development strategy is having the knowledge of where you are now and the ability to evaluate the impact of change.

'This knowledge gives planners and communities the power to act quickly in the face of change and to inform or gain support from State or Federal governments for community building projects.'

In Bendigo, REMPLAN was the catalyst for the City of Greater Bendigo to gain State Government funding to promote Lake Eppalock following a drop in tourism numbers due to the drought.

City of Greater Bendigo Business Development Officer Jim Dannock said data collected from tourism operators on visitor numbers and occupancies was entered into the economic model for the Greater Bendigo region using REMPLAN software.

'Using REMPLAN we were able to calculate the annual tourism value of the Lake to the region to be some \$20 million. We were also able to calculate the impact of drought and loss of tourism numbers to the Lake to have cost the region some \$13 million.

'This provided a very solid case to put to the State Government for funding which assisted to promote the Lake in the Melbourne area this summer highlighting it as a fishing and recreational attraction.'

Mr Dannock said the beauty of REMPLAN is the speed at which it can produce an economic impact assessment for a project and its cost effectiveness.

'This is the first time we've been able to produce this level of information in-house which has significant advantages in saving time, costs and increasing our responsiveness to issues.'

Mr Nichol said one of the aims of the CSRC's work was to demystify economic modelling by placing REMPLAN software on the desktops of regional economic development practitioners

REMPPLAN is central to regional economic research conducted by the CSRC, a leader in the field of economic modelling in Australia.



Mr Nichol, foreground, with Mr Pinge, at Bendigo.

Recently, the CSRC assisted the Australian Productivity Commission examining the impact of proposed tariff cuts on the textile, clothing and footwear industry.

'Information such as this can be life-changing for communities giving them a strong argument to push for or against change, gain government assistance, or plan to meet change.'

The CSRC has been established by La Trobe to assist regional development.

It draws on the expertise and research skills of staff across the University, and provides consultancy services to organisations and individuals.

It has provided expertise on a variety of issues including ecological profiling, natural resource management, resource allocation, mining recycling, by-product reuse, infrastructure clustering, Commonwealth and State transport policy, irrigation, tourism, and community banking. ■



One of China's leading medical researchers, Professor Yang Baofeng, President of Harbin Medical University, has been awarded an honorary doctorate by La Trobe University.

Professor Yang – who has been granted patents for the invention of three new major drugs and has held research posts in Japan and in Montreal, Canada – was named the Outstanding Young Expert by the Chinese Ministry of Health for 2001-2002.

Presenting the honorary doctorate at a Faculty of Health Sciences graduation ceremony recently, La Trobe Deputy Vice-Chancellor (Research) Professor Fred Smith, spoke of Professor Yang's

Honour for top Chinese medical researcher

enormous contributions to medical science, his development of medical education in China, and his very close association with La Trobe University in forging innovative joint programs, primarily in the area of public health.

'Professor Yang's belief in the value of internationalisation has led the Harbin Medical University to be linked to many prestigious universities worldwide, including membership in the International Network of Universities, a consortium founded by La Trobe University to enhance opportunities for staff and student mobility between the partner universities,' Professor Smith said.

Professor Yang's major contributions to medical research have been recognised by the award of numerous prizes. He has been honoured for his study of berbamine, a novel antiarrhythmic drug, as well as for the invention of Xuezhiping, a new drug which rapidly produces marked reduction of cholesterol and triglyceride levels in the plasma of patients with hyperlipidaemia.

His significant contributions to the curriculum for both undergraduate and postgraduate students throughout China, either as Chief Editor or Associate Editor of critical textbooks, include the *Textbook for Medical Colleges and Universities in China* and the *Textbook for 7-year Program Medical Students*.

Professor Yang is a graduate in pharmacology from the Tongji Medical University in Wuhan.

Accepting the award, Professor Yang said he has been happy to contribute to the relationship between La Trobe and Harbin universities, and that these links have made considerable contributions to the study of health sciences and administration, nursing and business programs in both countries.

Professor Yang said La Trobe University was a well-known and active university in China and he was honoured to receive such recognition for his research and for his own university while in Australia. ■

EUREKA'S WOMEN

Dr Clare Wright takes up federal research grant at La Trobe University

Award-winning historian, Dr Clare Wright, has taken up a three-year federal grant as a Postdoctoral Research Fellow in the History Department at La Trobe University.

Dr Wright has left her previous position as the Executive Officer of the History Council of Victoria to commence her new research project, funded by the Australian Research Council. Her project, *Eureka's Women: An Intimate History of Sex, Class and Culture on the Victorian Goldfields*, will be the first systematic study of the role of women in the Eureka Stockade.

'It is appropriate that this important study should commence in 2004 – the 150th anniversary of the Eureka uprising,' says Dr Wright.

'This year will be the occasion for commemorations and speech-making about the legacy of Eureka for our national identity. This sort of talk tends to emphasise the masculine nature of the struggle: male passions inflamed, male blood shed, manhood suffrage won. But it is important to remember that 3,500 women were living in Ballarat in 1854 and these women's hopes, fears and actions are part of the Eureka story too.'

It is not the first time that Dr Wright has provided a female perspective on a seemingly male domain. Her national award-winning doctoral thesis – the topic of her first book *Beyond the Ladies Lounge* (MUP 2003) – is a history of female publicans in Australia. The book won popular and critical acclaim for its



revelation that Australian pubs have largely been run by women.

Dr Wright – who holds a PhD from the University of Melbourne and an MA from Monash University – is committed to raising the public profile of history. She presents a regular radio history segment on 774 ABC Melbourne's *Evening Program* and can be seen as a member of the Brains Trust on ABC TV's *The Einstein Factor*. ■

Vale Dr Elizabeth Essex

A significant contribution to global space research

by Peter Dyson

DR ELIZABETH ESSEX, who died earlier this year following an illness, was an outstanding space physicist. She developed her own research program, achieved international recognition and, as a teacher, inspired many students who went on to develop significant careers of their own.

Most recently she played a pivotal role in La Trobe University becoming a partner in the CRC for Satellite Systems. With her help, the CRC built and launched FedSat in 2002. It was the first Australian satellite for some 30 years, and it continues to operate today.

Elizabeth was project leader for space-based GPS observations using the receiver on FedSat. This has opened up a new means of studying the outer regions of our atmosphere, as far out at 22,000 km – half way to the ‘near-miss’ asteroid that flashed past the Earth recently.

Last November the FedSat project received a National Award for Engineering Excellence in recognition of both its engineering and scientific achievements.

Elizabeth studied physics at the University of New England in Armidale, NSW, in the early 1960s where she completed a PhD in ionospheric physics. She then lectured for three years at the University of the West Indies in Jamaica.

On her return to Australia, she accepted a post-doctoral fellowship at James Cook University and soon after, in 1969, moved to a lecturer’s position at La Trobe. Four years later she was promoted to senior lecturer.

La Trobe Foundation Professor of Physics, Keith Cole – a world authority on aurora, the ionosphere and magnetosphere – and Dr Eric Butcher were already at La Trobe. I arrived soon after. Together we formed a research group concentrating on ionospheric physics.

With La Trobe in the process of rapidly developing into a first class university, there was money to start research and large

mechanical and electronic workshops to build whatever equipment you needed. However, we also needed a field station for our radio and optical instruments away from the radio interference and light pollution of the city.

Elizabeth decided she would study the ionosphere using a technique based on detecting signals transmitted from satellites. This defined her future research career and led to her gaining her very significant international scientific reputation.

The properties of these signals are modified as the signals traverse the ionosphere on their way to the ground. If you can determine these changes, you can use the information to tell you about the ionosphere. From complex GPS navigational systems used by aircraft to maps in modern cars that can suggest the routes you take, the study of these signals has many direct practical applications.

To do this work, Elizabeth set up the first satellite receivers at her home in Research, then pretty much on the outskirts of Melbourne, until we found a suitable block at Beveridge, 35 km north of Melbourne. Her equipment was one of the first instruments located at Beveridge and she continued to operate there until recently.

The Earth’s magnetic field is a partial barrier and most of the ‘action’ in the ionosphere occurs near the poles. Australia’s stations in Antarctic and at Macquarie Island are ideally located to study these effects. So, with Keith Cole, Elizabeth then pioneered the expansion of our group’s research activities to the stations operated by the Australian Antarctic Division. Over the years, our Antarctic program has been very significant in attracting students keen to combine research with a winter in Antarctica.

The importance of the satellite techniques used by Elizabeth, particularly for the GPS navigational systems, led to



the formation of an international group of scientists known as the Beacon Satellite Group. Liz was a valued member of the core group of scientists that planned international conferences and exchanged ideas and results to develop these techniques.

Her contribution was such that on several occasions her expenses were paid for by JPL, the Jet Propulsion Laboratory, which is managed for NASA by the California Institute of Technology.

Elizabeth also helped develop ‘microbarographs’ to detect wave-like oscillations in the atmosphere at ground level. One idea was to see if you could detect these waves propagating up into the ionosphere. At least two postgraduate students worked on this project. One, Geoff Love, is now Director of the Bureau of Meteorology.

Elizabeth was quiet, gentle, yet very determined. She was widely respected wherever she went. And she was a role model, helping other women students forge their careers in physics.

We have lost an esteemed colleague and friend. We will miss her and extend our condolences to her husband Harvey Cohen, and to her children David, Alexander, Raymond and Zara. ■

Professor Dyson is Head of the Department of Physics. This is an edited version of the eulogy he delivered for Dr Essex.

The advantages of studying abroad

INU scholarship winners return

The first two groups of International Network of Universities (INU) 'Targeted Travelling Scholarship' winners from La Trobe University have returned from study abroad full of praise for the scheme.

The students are part of an ambitious scheme to encourage more Australian undergraduates to expand their horizons by doing at least a semester of their undergraduate degree in another country.

La Trobe Vice-Chancellor, Professor Michael Osborne, is president of the INU, a consortium of recognised quality universities in Australia, Asia, Europe and America.

Of the first 13 scholarship winners, all top second and third year students, nine went to the University of Leicester (UK) three to Malmo University (Sweden) and one to the Helsinki University of Technology (Finland).

A second group of 15 La Trobe students were selected to travel in 2003, nine to Leicester, five to Malmo and one to the Budapest University of Technology and Economics (Hungary).

Both groups of students met at a function hosted by Professor Osborne, who was one of the architects of the scheme, shortly after the 2003 scholarship holders had been announced.

Congratulating the new winners and thanking those who had returned for having been such good ambassadors for Australia, Professor Osborne said it was important for Australia to encourage more students to experience life in other countries.

He said there was an imbalance in the numbers of students coming to study in Australia from overseas and the number of Australian students going abroad.

'The INU scholarships are a step in the right direction and the government has now agreed to offer loans as part HECS for students who want to spend a semester overseas,' Professor Osborne said.

Typical of the first group of winners was Stefan Mauger, a Menzies College resident from Mooroopna who spent from September 2003 to February 2004 at Leicester University doing five full units and two half units for his Bachelor of Electronic Engineering and Master of Biomedical Engineering degrees.

'I am conscious of the many benefits I received at Leicester. They included the contacts I made with a different set of people and the benefit of seeing how another university operates,' Mr Mauger said.

'I experienced another culture because about 40 per cent of students at Leicester University are from abroad and a large number of people in the City of Leicester are of Indian or Pakistani descent.

'In addition, one of the great benefits to me as a student is the strength of Leicester University in the biomedical field, helping my ambition to be a biomedical engineer working with hospital equipment specialising in ultrasound and medical resonance imaging.

'Menzies College, its director, Dr Michael Shortland, and other staff, were of great assistance as was my faculty,' Mr Mauger said.

After scoring an 85 per cent average at Leicester, Stefan travelled extensively in Europe and Africa before returning to La Trobe resume his studies. He is now a Senior in college, with leadership and pastoral care responsibilities, and has become a firm advocate not only of studying overseas but of the benefits and opportunities of life in a residential college. ■

THE BARKINDJI BIOSPHERE

Continued from page 16

years and there are several significant cultural and historical sites.

There is also a plethora of species of animals and plants, several of which are rare and endangered and which have habitats that are threatened.

Many businesses and industries are located in townships next to the Biosphere. These include irrigated viticulture and horticulture, vast areas of dry land cropping and grazing, eco and nature tourism, salt harvesting and mining.

'A key component of the Biosphere is research and education, and most areas of the University will be able to contribute to, and benefit from, the establishment of the Biosphere,' Professor McDowell said.

Opportunities include research for staff and research training for postgraduate scholars.

'The University already has links with the Lower Basin Laboratory of the Murray Darling Freshwater Research Centre which is located on our campus in Mildura. We also participate with the Riverlink Agencies through the Riverlink Postgraduate Research Network to foster postgraduate research.'

There are many opportunities for research in environmental science. For example, studies into water quality and water use are of vital importance to the Sunraysia.

There is a rich history and pre-history, embracing research into archaeology and anthropology. Other fertile areas for research include sociology, education, tourism and hospitality, land use, business, and health.

Professor McDowell stressed that La Trobe had the capacity to draw together partner universities from the group of Innovative Research Universities of Australia and the International Network of Universities.

'In doing so, we can help the Biosphere gain prominence both nationally and internationally, providing tangible benefits for the Sunraysia Community and La Trobe University,' he said. ■



Water sleuth seeks solutions

There is controversy over water resource allocation and value-for-money associated with existing and proposed environmental works.

HOW EFFECTIVE are current methods of rehabilitating wetlands of the Murray and other rivers in the Murray-Darling Basin?

Aaron Troy, a La Trobe University Albury-Wodonga wetland ecologist, will literally get his hands both dirty and wet over the next two years in a very practical search for the answer to this question.

Mr Troy will analyse the effects the North East Catchment Management Authority's (NECMA) structural rehabilitation techniques such as earthworks, channels and regulators have on the relative health of the wetlands using such indicators as water, soil, plants, fish and insects.

He will examine six such planned sites between the Hume Weir and the Barmah Forest for one year before the works are carried out, and for a further year after they have been completed.

In his second year of his PhD and conducting the research for his thesis, Mr Troy will compare findings from each of the six 'human-influenced' sites with six floodplain sites that remain unchanged in their current hydrological regime.

He will collect macro-invertebrates – dragon flies, backswimmers (water boatmen), water beetles and other insects; macrophytes – aquatic plants such as reeds and water grasses; and also catch fish species such as Murray cod, carp smelt and gudgeons.

In addition he will examine water quality, including salinity and nutrients (nitrate and phosphorus) and the total carbon, nitrogen and phosphorus contents of soil in the wetlands

Explaining the need for such research, Mr Troy said that catchment management authorities have allocated significant resources for earthworks and regulation construction in attempts to rehabilitate floodplain wetlands.

'These floodplain wetlands have reversed seasonal flooding and drying regimes which the NECMA intend to return to a near natural regime. These altered flood regimes, caused by river regulation primarily for irrigated agriculture, are blamed as being the main determinant in affecting wetland health and productivity in the mid-Murray,' he said.

'Large environmental water allocations and works programs are now being employed in an attempt to rehabilitate wetland health, with substantially larger efforts proposed. However, there is controversy over water resource allocation and value-for-money associated with these environmental works.

'This is because usually only anecdotal evidence and isolated monitoring programs exist to support the need for such works.

However none have fully quantified the outcomes of such programs.

'My study will incorporate multiple control and impact sites which will increase the capacity to distinguish between differences due to human impact – non-seasonal flows – and those due to natural changes.

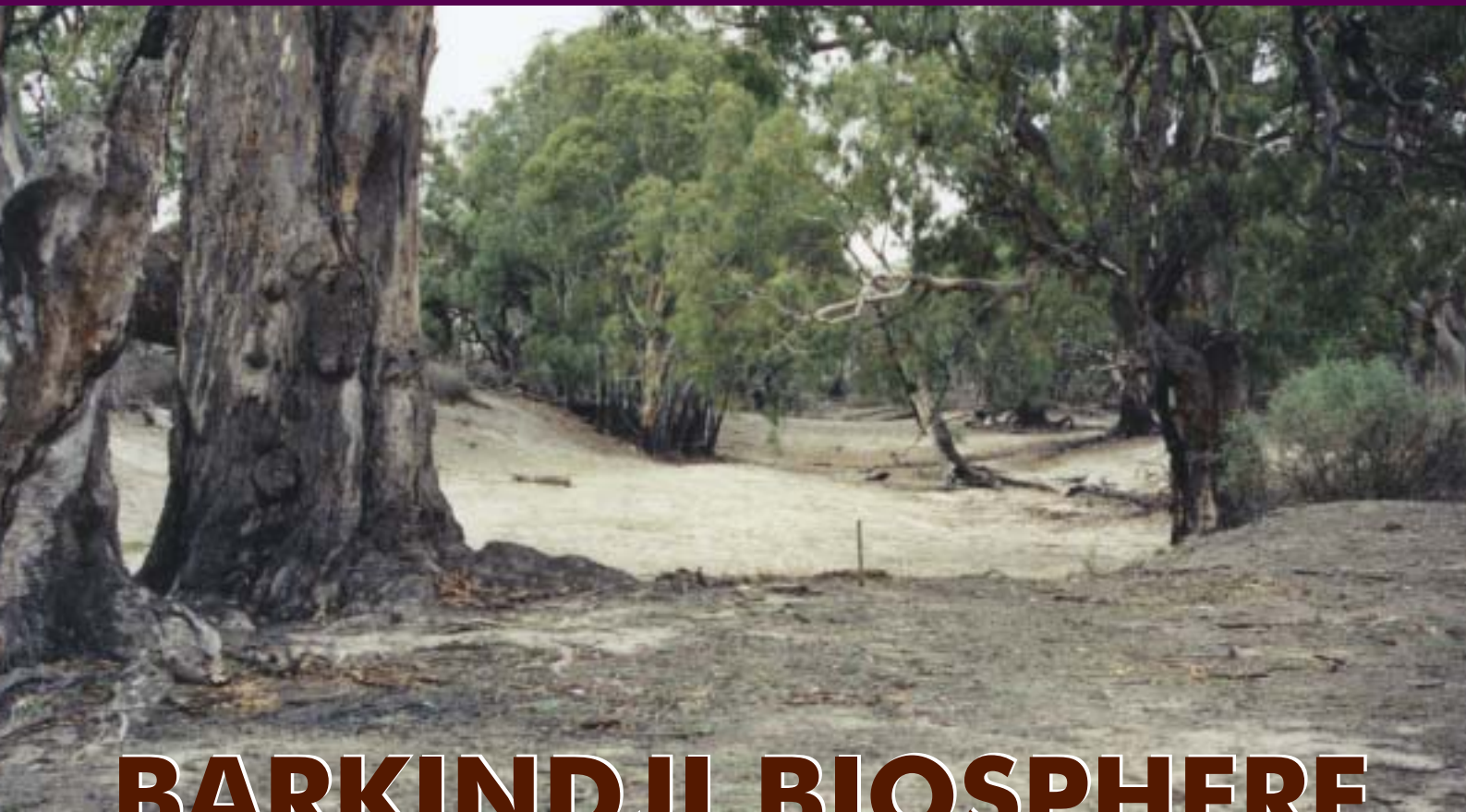
'The project will provide statistically valid quantification of the results of the rehabilitation works, and determine their value for money. My research will provide

valid scientific data which can be used when future decisions are made about such programs,' Mr Troy said.

He will work with his two PhD supervisors, Dr Phil Suter and Adjunct Professor Terry Hillman of La Trobe University Albury-Wodonga, Mr Keith Ward, NECMA wetlands manager and two scientists from the Arthur Rylah Institute, Mr John Koehn and Mr Jason Lieschke. ■



Mr Troy: examining six sites between the Hume Weir and Barmah Forest.



BARKINDJI BIOSPHERE

La Trobe participates in UNESCO environmental project

La Trobe University is contributing to the creation of a 'Biosphere' Reserve near Mildura – a project that promises to benefit students, researchers of the University and Australia more generally.

Biospheres, created under terms set out by UNESCO, are defined as 'areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use.'

The 'Barkindji Biosphere Reserve' is being established to 'demonstrate best practice land and water conservation and sustainable development in riverine and semi-arid zones, supported by internationally recognised research, accessible education programs and long-term employment opportunities for local Aboriginal people'.

It will be located near Buronga, New South Wales, just across the Murray River from Mildura, extending some 25 kilometres to the north and 75 kilometres to the west – an area of some 80,000 hectares.

La Trobe Deputy Vice-Chancellor, Professor Graham McDowell, a member of the Biosphere project team, said the inspiration for the creation of the Barkindji Biosphere Reserve came from Mr John Irwin, who recognised the potential to

create a Biosphere reserve at Mildura, with the Australian Inland Botanic Gardens as its epicentre.

A long-term resident of Mildura and supporter of La Trobe University's Mildura campus, Mr Irwin is Finance Director of the Australian Inland Botanic Gardens at Dareton, just north of the Murray River from Mildura.

'The vision of Mr Irwin was to encapsulate the best of existing Biosphere reserves. All the raw ingredients were there to enhance the environment and in so doing embrace the many indigenous Australians who are descendants of the peoples who have inhabited the land in the Sunraysia area for centuries,' Professor McDowell said.

Organisations that have already signalled interest in working towards the creation of the Barkindji Biosphere Reserve for listing as a constituent of the UNESCO Man and the Environment Program include the Australian Inland Botanic Gardens, the Sunraysia/Mallee Economic Development Board, the Trust for Nature, Birds Australia, the Myer Foundation, Earthwatch Institute, Environment Australia, the NSW Department of Land and Water Conservation, local municipalities, representatives of the local Indigenous

Community, La Trobe University and a number of commercial organisations

A key to the success of the proposal is strong support from the Elders of the Barkindji Nation who have sanctioned the use of the term 'Barkindji'.

The project has attracted substantial 'seed funding' from the Premier of NSW and the Federal Minister for Environment and Heritage. This has been used to engage a consultant, Ms Catherine Brown, who is preparing the Biosphere's nomination to UNESCO, see website (www.barkindji-biosphere.org) for further details.

Tracts of land from local station owners, as well as crown land make up the Biosphere. Ned's Corner – formerly one of the 'Kidman' properties and recently acquired by Trust for Nature – will become a significant component of the Biosphere.

The Biosphere contains many areas which are of conservation value for their natural flora and fauna. These range from wetlands, red-gum and black-box forests to Mallee landscapes, spinefax plains, salt lakes and sand dunes. Some areas are unique remnants of the most recent ice age. There are ancient Mallee gums, estimated to be 3,500 years old. Aboriginal people have lived in the area for some 40,000

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