



How long can our clean drinking water last?

by Lindy Brophy

The quality of Perth's drinking water is currently second to none, but using it as wastefully as we do could result in a threat to our health.

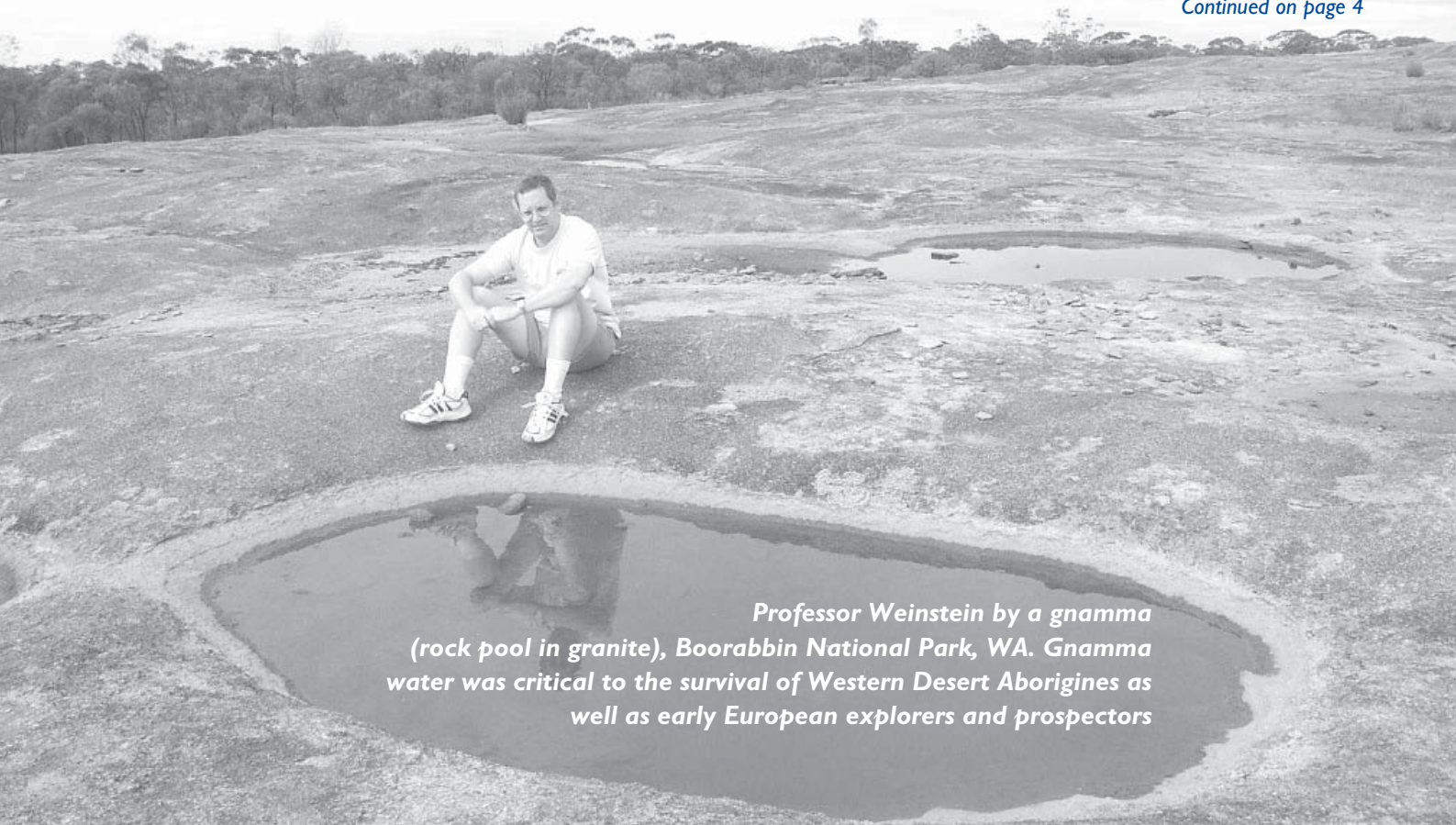
UWA's new Professor of Population Health, Philip Weinstein, says that, as water resources become more scarce, there will be pressure, both globally and locally, to relax standards of drinking water quality.

"In Europe, the European Association of Waterworks has already campaigned for the abolition of zero tolerance of pesticides in drinking water. Similar pressures are bound to arise here, if not sooner than later.

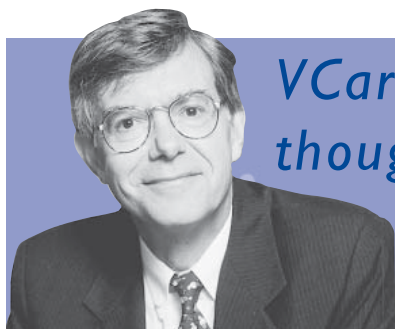
"The problem must be seen from an ecosystem perspective. Environmental research into drinking water quality is pointless without consideration of human health effects. Equally, epidemiological studies are pointless if they don't take into consideration the effects of ecosystem services that provide good quality water. To have sustainable water use in WA we need to integrate these approaches, which are after all based on the same ecosystem.

"At the moment we do not understand enough about the relationship between water quality and human disease burden (level of disease-causing elements). To help policy makers and water managers make decisions about where to invest scarce dollars, we need to know what disease burden in the community might result from such decisions," Professor Weinstein said.

Continued on page 4



Professor Weinstein by a gnamma (rock pool in granite), Boorabbin National Park, WA. Gnamma water was critical to the survival of Western Desert Aborigines as well as early European explorers and prospectors



*VCarious
thoughts ...*

Taking the Long View

Asked what he thought about the legacy of the French Revolution, a veteran Chinese political leader remarked, a few years ago, that “It is still too early to tell...”

We are all so engrossed in the urgent issues of our own times, that it is sometimes useful to step back and attempt a longer time perspective. And it can be inspirational, by reminding us how earlier generations overcame their own challenges.

I was particularly moved to think this way following a wonderfully successful Alumni reception held for UWA graduates recently in Adelaide.

For a variety of reasons we have not had such a gathering in South Australia for over a decade, while graduates meetings have come to flourish in all the other Australian cities.

A large group gathered, covering graduates from 1935 to last year, and we had, as our major guest speaker, Emeritus Professor Fay Gale, our esteemed former Vice-Chancellor of UWA. Graduate guests included not only the Hon. John Dawkins (now living in South Australia) who had, as Minister of Higher Education 1987-91, carried through the Dawkins’ Revolution in university formations, but also Mr Ira Raymond, for 18 years Adelaide University’s Librarian and the person after whom the very room in which we gathered was named!

A great range of other professions were represented, with so many alumni expressing appreciation for the way in which this University had shaped their careers, determined their opportunities and generally been transformative of their lives.

They could all tell me interesting stories, having experienced enormous changes at work and in society. A good education at a good university had been critical in their life stories.

The Crawley campus experience had also provided a network of friendships and professional associations. Many graduates tell me of this personal bonus and say that this is one

of the major reasons for attending our increasing number of alumni receptions here in Australia and overseas.

Graduates clearly read *Uniview* with close interest and we get a lot of positive feedback on its content. Keeping up on the news at UWA is much valued. I make it a point to take questions, if time allows, at our Alumni receptions. Changes in our institutional profile and on the campus are favourite topics. A sense of continuing engagement is very evident.

That interest also has practical meaning for the University. Specific alumni appeals so ably headed by the Director of Development (Peter Leunig) have already yielded more than \$4 million, with every prospect of growing gifts in the future.

But it is more than that. Our graduates are our best ambassadors in establishing the reputation of UWA and also playing a vital role in the choice of UWA by potential students both in WA and beyond.

The lessons from all this are manifold. Primarily it reminds all of us that Universities are long term phenomena. They belong as much to the graduates and the former staff as they do to those on the campus itself as students or staff. And they belong to the future members of the University.

In critical times for higher education, as we are clearly now experiencing, we need to make the plans, commitments and decisions which take account of the long term. Governments, policies, ministers, founders, stakeholders come and go, but the University goes on – provided we have that sense of past, present, future.

We are currently trying to build a UWA in that spirit. It is important to keep alive traditions both profound and popular. We are creating new structures and adopting new technologies, new teaching programs and research areas. We are also investing in new buildings — such as the Innovation Precinct incorporating the Motorola Software Centre, the Molecular and Chemical Science building and the Riley Oval complex (and new University Club).

That is what our graduates would expect. And they are right.

Professor Deryck Schreuder
Vice-Chancellor and President
vc@acs.uwa.edu.au

UWAnews

EDITOR/WRITER

Lindy Brophy

Tel: 9380 2436 Fax: 9380 1192 Email: lindy.brophy@uwa.edu.au

EDITOR-IN-CHIEF

Colin Campbell-Fraser

Tel: 9380 2889 Fax: 9380 1020 Email: ccampbell@admin.uwa.edu.au

Designed and typeset by Publications Unit, UWA

Printed by UniPrint, UWA

UWAnews online: www.publishing.uwa.edu.au/uwanews/



Legume research

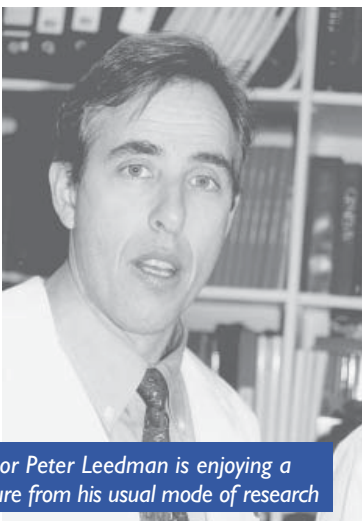
spread across
a wide field



Dr Shao Fang Wang extracts the chemical compounds from the clover



Professor Clive Francis has a unique gene bank of legumes



Professor Peter Leedman is enjoying a departure from his usual mode of research

An extraordinary range of multi-disciplinary research is coming together at UWA in the quest for anti-cancer drugs.

A five-year research project is working on identifying compounds from legumes, such as soy bean and red clover, which could one day help in the fight against breast cancer.

It is following a trail from field to pharmacy, involving two universities, several campuses and government departments. Working together are agricultural scientists, chemists, breast cancer cell biologists and a devotee of natural Chinese medicine.

"This is a unique collaboration," said Professor Peter Leedman, cancer research specialist and endocrinologist at the Western Australian Institute of Medical Research (WAIMR) and UWA's School of Medicine and Pharmacology at Royal Perth Hospital. "The project brings together an unusual breadth of expertise. And this biomedical research is being funded by the Rural Industries Research and Development Corporation!"

The research project draws on epidemiological studies of Japanese immigrants to the US who adopted the much higher rate of breast cancer once in the new country. "It's more than anecdotal evidence," Professor Leedman said. In Japan, the locals eat a lot of phytoestrogen-rich foods, such as soy, which contains isoflavones. The latter compounds have been suggested to be the key to the low breast cancer rates.

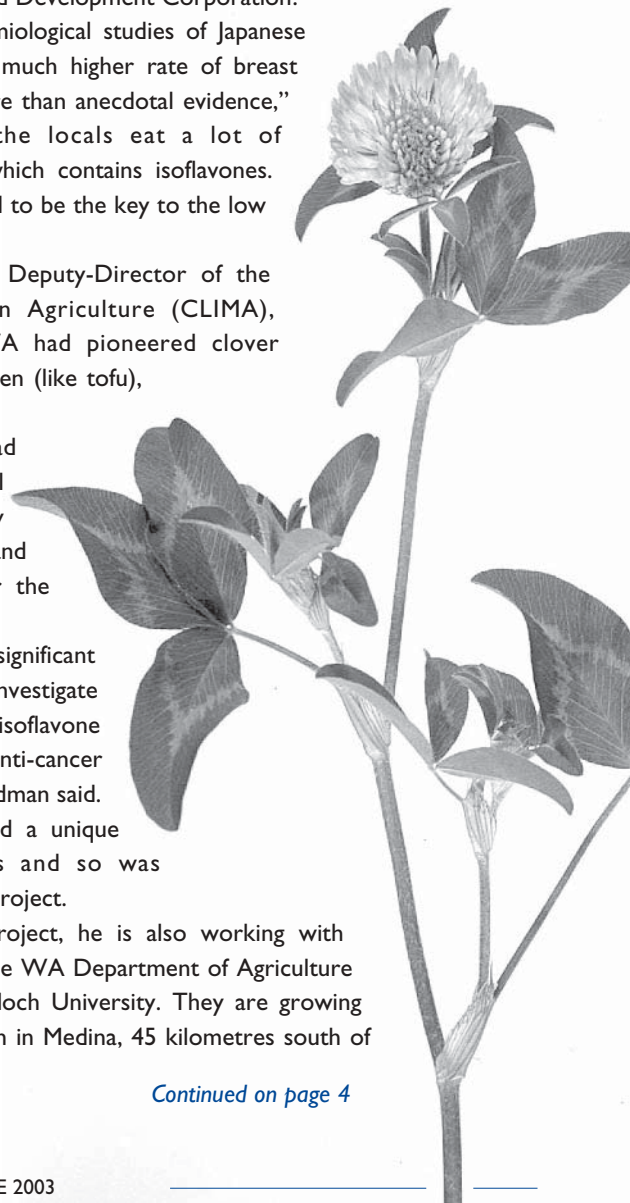
Enter the agricultural scientists: The Deputy-Director of the Centre for Legumes in Mediterranean Agriculture (CLIMA), Professor Clive Francis, said that UWA had pioneered clover (a forage legume) that was low in oestrogen (like tofu), as a fodder for sheep, some years ago.

More recently, Professor Francis had done some work with a pharmaceutical company on red clover, and the company had used the compounds to manufacture and sell an over-the-counter preparation for the relief of post-menopausal symptoms.

"The success of this approach was a significant encouragement to take the next step and investigate whether other novel and more potent isoflavone compounds might be identified for use as anti-cancer agents from these legumes," Professor Leedman said.

Professor Francis said that CLIMA had a unique gene bank of Mediterranean legumes and so was excellently-placed for this major research project.

At the legume-growing end of the project, he is also working with agricultural scientists Kevin Foster from the WA Department of Agriculture and Professor John Howieson from Murdoch University. They are growing red clover for this project at a field station in Medina, 45 kilometres south of Perth.



Continued on page 4

Continued from page 1

How long can our clean drinking water last?

Recently returning to Australia from the University of Otago, New Zealand, Professor Weinstein is dually qualified as a public health physician and as a zoologist.

"I combined these interests and skills to look at environmental health problems where ecosystem health affects human health. Vector (for example, mosquito) borne diseases and water borne diseases lend themselves to this area of research, because both result in human disease that is directly dependent on a series of environmental factors".

The *Cryptosporidium* scare in Sydney a few years ago, and the stringent water restrictions in Perth over the past two years have focussed ordinary people's attention on the quality and sustainability of our water supply, and why we can no longer be complacent about it.

Quantifying the health risk associated with the compromised availability of good quality drinking water is a high research priority. "We are at the beginning of some major research that I am hoping will become a key research thrust both at UWA and internationally.

"We have several unique opportunities in WA to contribute to this knowledge, not just for our own planning purposes, but as a contribution to the global need for such knowledge," he said.

So far, Professor Weinstein's new research group is involved in two collaborative water and health studies: the relationship between chlorination bi-products and birth defects in WA (with UWA's Institute of Child Health Research and the School of Water Research, Curtin University's Applied Chemistry, and WaterCorp); and the relationship between irrigation of ovals with recycled water and the infection risk to oval users (with WA Department of Health and CSIRO).

"Most decisions eventually come down to the dollars available and, ultimately, cost-benefit decisions about investment in the provision of safe drinking water will depend on the disease burden that the community is prepared to tolerate."

Continued from page 3

Legume research spread across a wide field

Chemist Dr Shao Fang Wang (an honorary research fellow at CLIMA and a chemist at the WA Chemistry Centre) explained that soy and other legumes contained isoflavones which may have a role in inhibiting the proliferation of breast cancer cells and in protecting against hormone-dependent cancer.

"In animal models, isoflavones appear to reduce growth rates and may prevent formation of tumours," Dr Wang said.

"The phytoestrogens that exist in red clover and other legumes have stirred interest as cancer preventatives and as treatments for menopause, osteoporosis and a range of other conditions. Legumes are also thought to contain chemicals that may prove useful for their antioxidant, antiviral, antimicrobial, antiallergenic and anti-inflammatory activities."

"Clive, John and Kevin choose and then produce the clover, Shao Fang generates crude extracts from the clover, and we then take what we call the *green goo* and put it onto breast cancer cells growing in culture," Professor Leedman said.

"We determine whether the extract can inhibit the growth of cancer cells, then Shao Fang takes those that look promising for further rounds of purification followed by subsequent laboratory cell testing.

"We are currently conducting those experiments with breast cancer cells and our Research Assistant, Viki Russell, is doing a fantastic job," he said.

"We are finding that some of the extracts are turning off breast cancer cell growth. The preliminary data looks good but there's a long way to go.

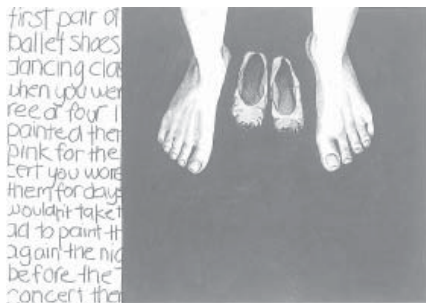
This project is a departure from Professor Leedman's mainstream research which focuses on the molecular mechanisms of how hormones act in breast and prostate cancer.

"But I'm really enjoying it," he said. He explained that the eventual outcome of the research would hopefully be identification and characterisation of a new isoflavone-type compound that was attractive to a bio/pharmaceutical sector partner who would further develop it for use in breast cancer clinical trials.

Kevin Foster with the CLIMA clover plantation
(picture by Michael Davies)



Out of the kitchen, into the gallery



By concentrating on women's work in its current exhibition, the Lawrence Wilson Art Gallery hasn't really narrowed down its focus at all.

Being of a particular gender appears to have had no defining influence on the purpose, process, subject matter or political persuasion of the 38 women artists whose paintings, drawings, sculptures and prints are on show in *Women's Work* in the gallery until August.

But, as exhibition curator, Sally Quinn, points out, "art history is seen to reproduce the assumptions and conventions of patriarchal cultures, so that although women have always created art, their presence and importance, at critical moments in history, has been wiped out.

"Women have been consistently associated with artistic enterprises which are perceived of less value and based on qualities such as delicacy or intricacy. Historically, women artists have not been associated with notions of originality or genius," she said.

"While some artists in the exhibition may understand their gender to be

inextricably linked to their practice, others will entirely reject such influence."

This exhibition considers two particular periods in the evolution of women's art practice in Australia in the 20th century: the modernist movement in the first part of the century, and the shift of feminist art practice in the 1970s and beyond.

From early in the century are urban images by Freda Robertshaw and Portia Bennett, including Bennett's architectural landscapes of Perth (*Hotel Adelphi*, *Lawson Flats*, *The Cloisters*), and expressionistic landscapes by Elise Blumann, highlighting features of Rottneest and the Swan River.

The seventies are captured by Carol Rudyard's big bold acrylic statements on canvas. The University owns one of the series of six *Linear Variations*. The artist has kindly lent the gallery the other five for this exhibition.

"*Women's Work* doesn't purport to be an exhaustive survey of Australia women artists," said Sally Quinn. "It is simply drawing on the strengths in our collection and supplementing it, mainly with the collection of Sir James and Lady Cruthers, who have focussed their collection on women's art for the past 20 years.

"When they were living in New York, they befriended young Australian women artists who were trying to make a go of it there and added their work to the collection. Among the works the Cruthers have lent us are some by Narelle Jubelin and Margaret Morgan, two of their New York acquaintances."

The exhibition will run until August 6 with free guided tours every Friday at 12 noon by Dr Jan Altmann who has expertise in literature, art history and women's studies.

On Friday July 11 at 1pm, Dr Annette Pedersen, art historian, writer and teacher, will discuss feminist art theory and the contemporary climate for feminist art practice, with particular reference to works in the exhibition.

On Friday July 25 at 1pm, Dr Clarissa Ball, Associate Dean of Architecture, Landscape and Visual Arts, will analyse several works in the exhibition.

Michele Elliot's charcoal and pastel series, Drawing on Memory, looks at life through the eyes of a female child



Pilbara project aims to answer ancient puzzle

Scientists from around the world have converged on the Pilbara this month to find out about life on earth around 3.5 billion years ago.

Japanese and American scientists from the University of Kagoshima, Pennsylvania State University and the NASA Astrobiology Institute have joined researchers from UWA and the Geological Survey of Western Australia in a major international scientific research project.

Associate Professor Mark Barley, Head of the School of Earth and Geographical Sciences, said the scientists were collaborating to settle some hotly debated issues.

"The Archean Biosphere Drilling Project (ABDP) aims to answer some important scientific questions about the existence of early forms of life in some of the world's most ancient rock formations," he said.

A diamond drilling rig – funded by the Japanese Ministry of Science and Education and NASA Astrobiology Institute – will spend more than a month drilling deep into the Pilbara's

ancient rock. Sample results could resolve debate on several issues — ranging from the existence of ancient life in Archean sedimentary rocks (between 2,700 and 3,500 million years old) to the composition of the atmosphere at that time.

"The Pilbara is one of the few places on earth where rocks older than 2,700 million years have suffered only minimal metamorphism, so have been well preserved. If you are a scientist looking for evidence of ancient life, this is where you come — because if you are to find fossils of micro-organisms you need to look in areas where the rock has been relatively undisturbed," Professor Barley said.

"Whether or not fossils exist remains a hot topic, with some scientists claiming there is evidence of very ancient life, while others dispute their findings. The purpose of this drilling is to get rock samples that have not been affected by surface weathering so we can look for micro-fossils or geochemical evidence of life. We drill deep for evidence of these biomarkers because it is easy for surface rock to get contaminated by younger material.

"We hope to find out what the atmosphere was like during this period. Was it free of oxygen? This is central to another debated topic, as some scientists claim that photosynthetic bacteria existed at that time, while others suggest they didn't develop for another billion years."

Professor Barley took time out from the expedition, the biggest he can remember coming together in Western Australia, to return to UWA to sign an agreement between the international parties.

He said a team had been drilling into red chert, the red rock that gives the Pilbara town of Marble Bar its name, and there were still red traces at a depth of 150 metres.

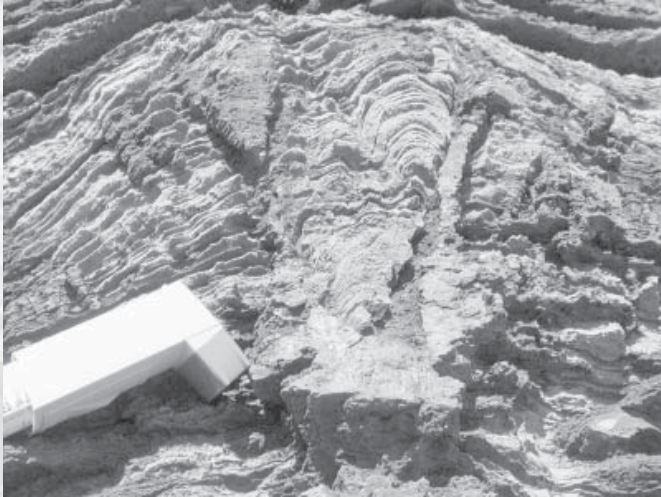
"This means that there has been oxygen at this depth," he said.

Professor Barley said the expedition would also be drilling to sample the 2,720-year-old stromatolites in the Pilbara, at a depth of more than 100 metres, to see if they contain microfossils.

"This collaborative project will yield information about

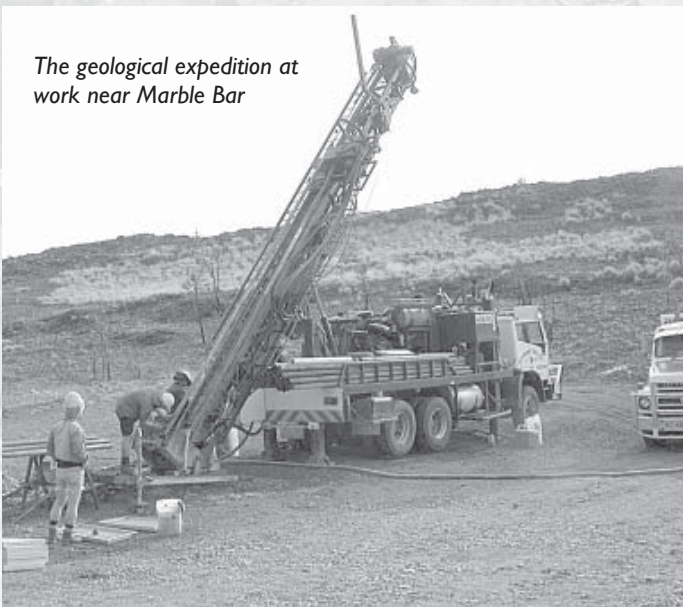
Associate Professor Mark Barley (seated) with some of the international team: Professors Kanji Tanamura (Vice President of Kagoshima University), Professor Bruce Runnegar (NASA Astrobiology Institute UCLA), Tim Griffin (Director, Western Australian Geological Survey) and Professor Munetamo Nedachi (Kagoshima)





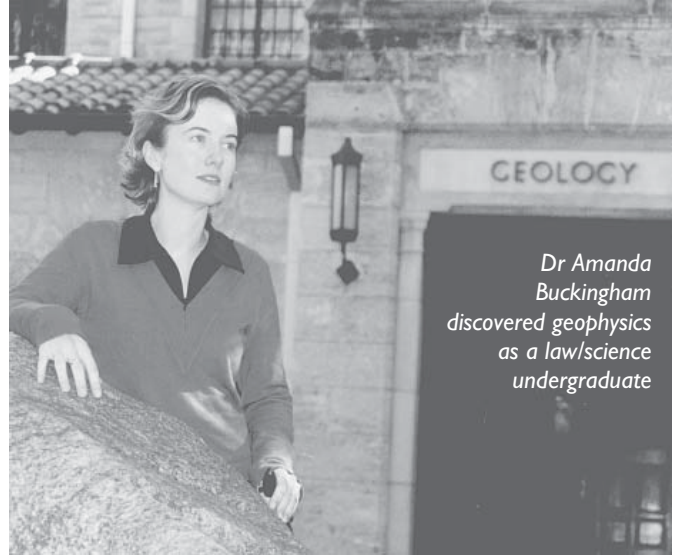
Associate Professor Barley put his inhaler next to a stromatolite to show its size but also to make the point that these may have been built by photosynthetic bacteria that produced the oxygen to make our atmosphere suitable for complex life. Some forms of that complex life now need help, in the form of inhalers, to live in that atmosphere.

the nature of the early biosphere (the types and distribution of organisms in the ocean, in lakes and on land), the climate, the chemistry of the atmosphere and oceans, the geochemical cycles and cosmic fluxes (meteorites, cosmic dust and other matter floating in the atmosphere)."



The geological expedition at work near Marble Bar

From law ...
to diamonds ...
to maths ...



Dr Amanda Buckingham discovered geophysics as a law/science undergraduate

the trail of a geophysicist

How did a law student end up surveying for diamonds in Botswana, then writing a thesis in mathematical geophysics that earned her a distinction?

"I could have chosen any course, when I left school," said Dr Amanda Buckingham. "I decided on a combined degree in law and science and, while I was at university in Sydney, I discovered geophysics, as part of my science degree and I found I really enjoyed it."

Dr Buckingham chose geophysics for her Honours year project, then worked for six years in the field, in Australia, Canada and Africa.

"I ran an office in Botswana for a Canadian mining company, with my husband, Rob Stewart, who is also a geophysicist. We organised aerial surveys and processed the data from them. It was part of a government initiative to attract potential investors in diamond mining," she said.

"But work in this sort of area is dependent on the health of the mining industry. A slump came along and we decided that, if we were going to be out of work, we might as well do something worthwhile, so we enquired about doing our PhDs at UWA and were lucky enough to be accepted."

Dr Buckingham said her co-supervisor, Dr Ron List, from the School of Mathematics and Statistics, came up with a fantastic idea for her thesis. "Ron was just brilliant. I hadn't done any maths since school, but I needed it for image retrieval techniques, and he was so helpful, pointing me in the right

Continued on page 8

Continued from page 7

the trail of a geophysicist



direction.” Her co-supervisor was Associate Professor Mike Dentith, from the School of Earth and Geographical Sciences, for whom Dr Buckingham also had high praise. Her thesis was on edge detection and image retrieval techniques in the interpretation of magnetic images for mineral exploration.

The Board of the Postgraduate Research School awarded her a distinction, which is made to only five percent of these classified as passed.

“I didn’t do my PhD to help me get a job. I did it because I wanted to learn more, not just gain a qualification. I think it was really important that I worked for several years after finishing my undergraduate degree. If I hadn’t, I wouldn’t have known what I wanted to do,” Dr Buckingham said.

She is now working for SRK, a mining and geology consulting company in West Perth, which, she says, encourages links with UWA and urges their employees to engage in research.

“As SRK’s only geophysicist, I use geophysics and geochemistry to interpret data to help people who want to mine. And I now find that my maths is invaluable, especially with electro-magnetics.”

Dr Buckingham recently won the Cagniard Award for 2003 from the European Association of Geoscientists and Engineers for a paper she presented in an international conference in Florence last year. The award will be presented in Norway later this month.



Dr Kate Trinajstic at work in the Canning Basin

Double life takes scientist back 350 million years

Kate Trinajstic leads a double life. For two days a week, she helps her husband in his practice as an orthopaedic surgeon. For the rest of the week, she is a palaeontologist at UWA.

Dr Trinajstic works with senior geology lecturer Dr Annette George, doing research in the Kimberley’s Canning Basin, and has just won the second Dorothy Hill Award from the Australian Academy of Science.

The inaugural winner (last year) was Dr George and she says she is thrilled that her colleague has followed her. The award is for women under the age of 40 and recognises excellence in the earth sciences.

“I was a nurse before I became a geologist,” said Dr Trinajstic. “I trained in the days before nursing was studied at university, but when I decided that I’d like to upgrade my skills, I found that three years study would result in only a diploma. So I decided to study science instead of nursing, which would get me a degree at the end of three years.

“I did a biology degree, which I started at Macquarie University (NSW) and finished at Murdoch when we moved to WA. I discovered palaeontology, and realised that there were careers other than nursing in the world.”

After her undergraduate degree, Dr Trinajstic worked for a year at the WA Museum with Dr John Long.

“While I was there, I was approached to take part in a world-wide UNESCO project to plot the Devonian era (350 million years ago) or the age of fishes.

“It was suggested that I combine this research with a PhD, which I did. When I did my undergraduate degree, palaeontology came under biology, but at UWA, it is part of geology. That’s how I moved from nursing, via biology, to geology!”

Dr Trinajstic has been working with Dr George for three years, trying to pinpoint ages for different rock formations in the Canning Basin, using fish fossils to determine ages. The Canning Basin reefs used to be underwater 350 million years ago.

“The rocks don’t have many of the traditional fossils in them, but I’ve recently found, at a site called Horse Springs, some little fishes and shark’s teeth which had been missing from the Australian palaeontological picture. I found them with conodont fossils, which have a very refined age range, so that’s a great help in determining when the fishes were there, and hence the age of the rocks.”

Dr Trinajstic received her Dorothy Hill award at the Academy of Sciences in Canberra last month, at the same ceremony at which her colleague, Professor David Groves, was made a Fellow of the Academy.

Prisoner

perspectives

The rate of imprisonment of women has risen, but it has more to do with politics than crime rates.

Professor Anne Worrall, a visiting research fellow at UWA's Crime Research Centre, is an international expert on women and crime. After several months here from Keele University in the UK, she is the keynote speaker at a seminar on women in prisons.

The seminar, at St Catherine's College, where Professor Worrall is staying while at UWA, is being organised by the Australian Federation of University Women (WA) and will focus on recent research and proposed changes to women's imprisonment and the correctional system.

"Women commit very little crime but people are concerned that there is an increase in the number of women in gaols, both here in Australia and in the UK," Professor Worrall said. "There has been some increase in the rate of women's crime — as there has been in men's crime — but the reason is primarily a change in attitudes to women's offending.

"It used to be seen as a cry for help and one that needed a welfare solution, rather than imprisonment. But as women offenders have become more visible they have stopped being looked at benignly and paternalistically.

"Changes in attitude have led to changes in policy and women offenders are being locked up, just like men, rather than counselled and helped to remain out of custody,"

At the seminar *Women in Prisons*, Professor Worrall will discuss international perspectives on women's imprisonment.

"International concerns about women in prison transcend national boundaries and they include concerns about the increase in the rate of imprisonment, the high proportion of ethnic minorities who make up the prison population (and in Australia's case, this means Aboriginal women), concerns about their health and about them as mothers," she said.

From a background in sociology and social work, 10 years as a probation officer, then a social work lecturer, training probation officers, Professor Worrall joined the criminology department at Keele, where she did her PhD on women and crime.

"I feel women are poorly served in prisons, because they are such a small proportion of the prison population. I am interested in alternatives to prison but of course I also have a strong interest in prisons. I am currently on the Parole Board in England and Wales.

"The problems in prisons here are similar but the solutions are different, mainly because of the Aboriginal population in Australian prisons. Because of their needs, corrective services have been forced to find community solutions, and we, in the UK, could learn from them," Professor Worrall said.

While at UWA, she has carried out work for Professor Richard Harding, now Inspector of Custodial Services, researching rehabilitative programs in Western Australian prisons.

"Changes in attitude have led to changes in policy and women offenders are being locked up, just like men, rather than counselled ..."

"But I'm also here to teach a unit called *Women, Crime and the Criminal Justice System* as part of the Masters in Criminal Justice and to co-ordinate a criminology unit for undergraduate Arts students who are interested in current affairs and politics and want to know what's going on around them.

In Europe, she is currently involved in a comparative research project funded by the European Commission, looking at the problems of women's resettlement after their release from prison.

Women in Prisons is at St Catherine's on Monday June 30, from 7pm. Also speaking will be Cheryl Clay, the new Director of Women's Custodial Services for the State Government Department of Justice in WA. She will be speaking about future directions for women's imprisonment in WA.

Entry is \$15 and includes supper. For further information, call 9386 3570.



Professor Anne Worrall ... an expert on prisons who would like to see more alternatives to prison



UWA merry-go-round connections

By Trea Wiltshire

When Black Swan Theatre's production of *The Merry-Go-Round in the Sea* played at the Festival of Perth in 1997, it was widely acclaimed by the media as one of those rare productions that "gets everything right".

The Australian described the set as "a masterpiece... perfectly matched by the beautifully understated direction".

Certainly this beguiling piece of theatre that dramatises UWA graduate Randolph Stow's classic deserves to be seen again in its hometown – and many will want to make a return visit to the Playhouse Theatre to see this adaptation by Dickon Oxenburgh and Andrew Ross. The season opens on July 24 and runs to August 9.

Stow's novel is a classic of modern Australian literature. An elegy to change and the rites of passage, it spans six years in the life of a boy, Rob Corum, growing up in the sleepy town of Geraldton.

First year arts student Leonard Goulds plays the lead role of Rob. UWA graduate Kim de Lury plays the role of the boy's older cousin, Rick, who joins the Australian Defence Force and returns from war haunted by his experiences as a POW.

Another UWA connection is graduate Iain Grandage who is musical director. An open workshop and discussion with Iain Grandage will be held on August 2. To book a place, email: general@bstc.com.au

For tickets, call BOCS or book through them at the Octagon Theatre on campus.

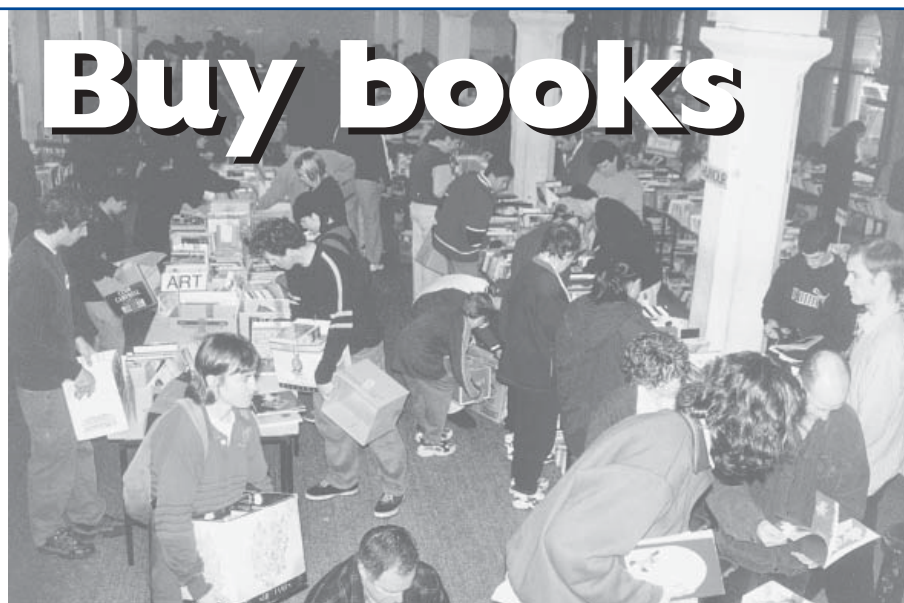
One of the year's most eagerly-awaited events on campus is the Save the Children Fund Book Sale.

It's coming up next month, with its usual bonanza of books, bargains and boxes. No problems with excess plastic bags at this sale: most customers stagger away with their literary treasures loaded into cardboard boxes.

If you don't mind queuing, some of the best buys are to be had on opening night, Friday July 25, from 6pm to 9pm. It gets slightly less hectic as the weekend progresses, with the sale open on Saturday and Sunday, from 9.30am to 5pm.

Each morning, doors will open at 9.30am. On Monday and Tuesday (July 28 and 29) the Undercroft will stay open until 7.30pm.

Then, on the final day of the sale (Wednesday July 30), when you can usually fill a box for a few dollars, the doors close at 2pm, to give organisers time to pack away the left overs.



Buy books

for a better life for children

For book lovers, the SCF sale is a wonderful time to forage for favourites, try some different sorts of books and even discover new interests, through the vast array of non-fiction. There are also CDs, records and sheet music on sale.

All proceeds go to the Save the Children Fund to help disadvantaged children in Australia and overseas, including Vanuatu, Vietnam, Cambodia, Bangladesh, Papua New Guinea and the Solomon Islands.

Personal Passions

A series looking at the Personal Passions of people on campus ...

Russell Dyer (left), Jonathan Foster and their young soccer team
(Photo: Paul McGovern, Post Newspapers)



Jonathan Foster finds himself surrounded by children these days.

Associate Professor Foster has recently moved from the School of Psychology to the School of Paediatrics and Child Health and the Institute of Child Health Research.

About the same time, he took on another child-oriented role: coach of the Subiaco Soccer Club's Under 10s.

"My son George, who's in the team, transferred from Aussie Rules footy to soccer and my wife Jane saw it as a great opportunity for me to spend more time with at least one of my children, so she, as they say in Australia, doxed me in!" Jonathan said.

He played soccer as a child, but as a teenager went to an English public

school where everybody played rugby. "They say that sport is the modern equivalent of war ... well I reckon rugby must be the closest sport to war," he said.

Jonathan said that, as a lad, living in Staffordshire, George Best had been his hero. His involvement in his son's soccer team has rekindled his interest in UK soccer.

"It's great to have another interest. Coaching the team has really helped me to de-stress. It's an ideal way to get your head out of work. I'm even thinking about doing a coaching course. I've never coached sport before and I'm really enjoying it.

"With nine- and ten-year-olds, getting their attention is half the battle! My co-coach is a school teacher (who

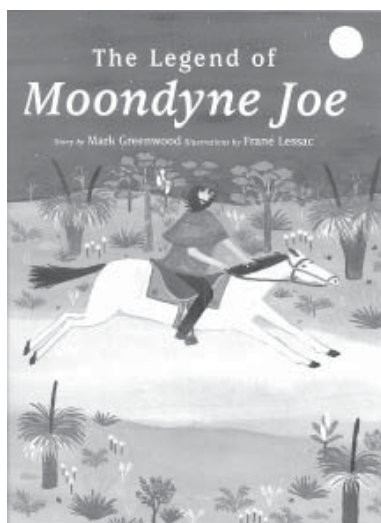
also does some teaching for UWA Extension), Russell Dyer, so he's a great help with that."

Jonathan said that he and Russell are strict about having fair substitutions and rotation of players off the bench.

"Sometimes you can play the best team and get a great result, but it's not necessarily fair to do it that way," he said.

Patience is the best virtue a children's coach can have and Jonathan and Russell believe in lots of action and not so much talk. "Kids learn by doing, not by listening," he said.

Subiaco Under-10s started the season with a couple of wins but haven't had many since then. But they are all definitely having fun.



Over the moon over Moondyne Joe

UWA Press had success at the Premier's Book Awards.

Their children's book, *The Legend of Moondyne Joe*, won its category and UWA Press director, Dr Jenny Gregory, says everybody is 'over the moon' about the win.

Moondyne Joe is published by Cygnet Books, an imprint of UWA Press. It was written by Mark Greenwood and illustrated by his wife, Frané Lessac. The couple have produced some stunning children's books which are often award-winning or short-listed.

Mark's text was described as a successful attempt to retell history for children, without judging the central character of the bushranger. Frané's naïve-style illustrations are a perfect foil.

Also in the winners' circle was History Professor Richard Bosworth who won the overall award for his stylish biography of Mussolini, published by Edward Arnold. It was described as 'truly a work of international standard. But Professor Bosworth simply said that he was now catching up with his wife, Michal, who won the award ten years ago!

THE last word

Matthew Styles

Lecturer, School of Music

As a cultural society, we are constantly looking for ways to unite and form bridges between people. Music is one of the ideal mediums through which this is possible, and also powerful and lasting.

Music is an excellent conduit to facilitate the breaking down of barriers. Whether it's classical, jazz, rock or *avant garde*, it is a very powerful medium in promoting social integration and cohesiveness.

The trend in western music — classical, jazz and popular — is to draw from many traditions and cultures, and to bring them together to create something with mass meaning and an ability to communicate to as wide an audience as possible.

As a saxophonist, I am very fortunate to be able to be involved in the education and performance of just about every kind of western music at the School of Music. The saxophone itself is a versatile and boundary-crossing instrument which is seen as an instrument of change, progression and popular appeal. It is an instrument that encourages broad thinking and the breaking down of social and cultural barriers.

With the rising choices available for online learning, the increase in people's desire to use technology and UWA's initiatives in

online teaching, the School of Music and its visionary offerings is poised to break down communication barriers and offer some of the best teaching and performances in the country to any place outside the metropolitan areas.

Thanks to the vision of the head of school, Mark Coughlan, the concerts and outreach manager, Evan Kennea and the school's technological pioneer, Dr Sam Leong, the school's vision for the future has exponentially increased and broadened.

In April of this year, I was asked to be a part of the launch of CSIRO's impressive new high-speed network technology project that enabled Mark Walton (Head of Woodwind at the Sydney Conservatorium of Music) to conduct a 'live-to-air' masterclass from Sydney with a saxophone quartet from the University of Western Australia's School of Music, while they were in Perth! The Federal Minister for Communications, Senator Richard Alston who was in attendance, was very supportive and impressed with this seemingly impossible feat.

I was inspired by this launch and am looking at piloting a program that will initially broadcast one-on-one 'live teaching' to some of the most remote areas in WA. Benefits would include:

- Being able to deliver a well-rounded educational experience in the creative arts that would generally not be available in remote areas
- Enhancing a sense of community and teamwork through the social and cooperative aspects of making music in groups
- Delivering a more cost-effective method of developing musical skills and experiencing music as part of their education

My own passion is exploring how all music can be presented in an engaging and explorative way by crossing musical barriers (and on occasion, trying to combine fields), and building bridges between music, cultures and most importantly, people.

After examining and performing in some of WA's most remote town and cities (from Kununurra to Esperance), I began to meet and talk with people whose experiences were severely limited because of distance.

It emphasized my view that as many people as possible should have the opportunity to have access to the best educators from WA and across Australia. The advances in technology and people's understanding and willingness to be a part of the technological revolution, have opened doors to allow some of the best educative minds one could hope for. With the advent of the 'i-lectures', we now have the unique opportunity of taking education to the far reaches of our state and nation. I believe this is an opportunity we need to firmly embrace and support. I believe also, that we can be among the leaders in this technology and in the pedagogy involved in teaching and broadcasting our expertise.

I hope to become involved in projects that will take music and all its benefits into the community and to encourage those who didn't think studying at UWA was a possibility.



Healy Medical Research Foundation

Healy Postdoctoral Fellowship 2004

Closing date: Friday 11 July 2003

Applications are invited from candidates who are graduates of medicine or science, or who hold a bachelor's degree in a cognate discipline, for appointment to the Healy Postdoctoral Fellowship for a fixed term of three years, commencing January 2004.

The object of the fellowship is to facilitate and encourage experienced researchers who have completed their PhD degree within the past five years, to undertake an approved programme of medical research within The University of Western Australia, or other affiliated organisations as approved by the Research Committee.

The salary for the appointee will be in the range \$53,592 to \$63,642 p.a., plus a clinical loading where applicable.

The Healy Postdoctoral Fellowship is administered through the Raine Medical Research Foundation.

The application form, conditions, and background information for candidates are available either from the Raine web site: <http://www.raine.uwa.edu.au/fellow> or The Raine Medical Research Foundation, MBDP: M651, Suite 24, Hollywood Specialist Centre, 95 Monash Avenue, Nedlands WA 6009. Telephone: 9386 9880. Email: lellis@raine.uwa.edu.au

Applications, together with curriculum vitae and academic record to be received at the Raine Foundation office by **5pm Friday 11 July 2003**.

Indigenous Research Network (IRN) Expression of Interest

Expressions of interest are sought from indigenous people undertaking research in all fields of interest, but particularly health and mental health (emotional and social wellbeing).

The Indigenous Research Network is being developed to offer support, information and, as the network is established, hopefully training in indigenous-relevant and appropriate research practices.

This is an opportunity to be with other indigenous researchers who understand the personal and unique challenges that go hand-in-hand with being an indigenous researcher and doing indigenous research. It will be a forum to present your project, if you wish, to listen to other speakers talk about their experiences, to find out what is happening in indigenous research across the state, and to engage with information and training in research methodologies.

Initially we would like to have a meeting to talk about the establishment of the Indigenous Research Network. Indigenous students from all universities or teaching institutions, academics, health professionals and workers and project officers are welcome to attend.

We would like to talk about such issues as founding committee members, instituting appropriate Aboriginal terms of reference, and future directions.

Please contact Clothilde Bullen (Hill), Research Officer, on 9224 0289, or email clotilde@cyllene.uwa.edu.au for further details.

ARTHRITIS FOUNDATION OF WA

Dr Daniela Ulgiati, A/Prof Lawrence Abraham and Dr Peter Hollingsworth, Biomedical and Chemical Sciences, UWA Centre for Medical Research and Surgery and Pathology: 'Regulation of the complement receptor type 2 gene (CR2/CD21) in patients with rheumatoid arthritis and systemic lupus erythematosus'—\$35,000 (2003).

AUSTRALIAN RESEARCH COUNCIL: DISCOVERY PROJECTS

Mr B. Corry, Biomedical and Chemical Sciences: 'A hierarchical quantum mechanical and classical simulation of biological ion channels'—\$210,742 (2003-05).

Dr William Stone, Dr S. W. Beresford and Dr E. Deloule, Earth and Geographical Sciences: 'The role of water in precambrian ultramafic magmatism: insights from an in-situ microbeam and nanobeam assessment of hydro-magmatic amphibole'—\$170,000 (2003-05).

CAUDIT (COUNCIL OF AUSTRALIAN UNIVERSITY DIRECTORS OF INFORMATION TECHNOLOGY)

Mr David Gance and Mr Thomas Reid, Computer Science and Software Engineering: 'Use of open source software in higher education'—\$13,360 (2003).

Continued on back page

Mid-year break

Please note that there will NOT be an issue of **UWA News** published during the mid-year break. The deadline for **editorial copy only** for the first issue after the break is **Wednesday July 2**.

The deadline for notices, campus diary entries and advertisements will remain as **Wednesday July 16**.

The issue will be published on **Monday July 28**.

volunteers wanted

People who suffer from MIGRAINES are needed to participate in studies to determine the types and extent of visual disturbances caused by migraines.

Also needed in these studies are people under the age of 40 who do not suffer from migraines.

People who volunteer for this program will have to attend two testing sessions. The first will be an eye examination, to determine whether you are eligible for the studies.

The second will require the participant to observe a computer in a dimly lit room. This will test your ability to detect moving dots and line arrangements.

The first session will take one and a half hours. The second will take only 45 minutes. Participants will be paid \$10 dollars a session.

Please contact Jennifer Ditchfield (Clinical Neuropsychology) on ditchjol@tartarus.uwa.edu.au or 9380 3468.

Brody Fulton

Research Grants & Contracts

ANEA (ITALY)

A/Prof Loretta Baldassar, Social and Cultural Studies: 'Anea Veneto study'—\$6000 (2003).

ARC DISCOVERY VIA UNIVERSITY OF ADELAIDE

Prof S. E. Smith, Dr Susan Barker and Prof F. A. Smith, Plant Biology: 'Targeted analysis on the arbuscular mycorrhizal symbiosis phenome in a model host, tomato'—\$56,000 (2003).



Monday 30 June

AFUW(WA) EVENING SEMINAR

The Australian Federation of University Women is hosting an evening seminar focusing on recent research and proposed changes to women's imprisonment and the correctional system. 'International perspectives on women's imprisonment', Professor Anne Worrall, Keele University, UK and current Visiting Research Fellow at the Crime Research Centre; 'Future directions for women's imprisonment in WA', Cheryl Clay, Director of Women's Custodial Services, Department of Justice. 7 to 9pm, St Catherine's College. Cost: \$15 per person (including supper). RSVP to Karen on 9386 3570 or email: afuwwa@home.it.net.au.

Wednesday 2 July

ENVIRONMENTAL DYNAMIC SEMINAR

'Science and empiricism in pile foundation design', Professor Mark Randolph, COFS. 4pm, Blakers Lecture Room, Ground Floor, Mathematics Building.

PERTH MEDIEVAL AND RENAISSANCE GROUP TALK

'Penis trees and popular culture in the late Middle Ages and early Renaissance', Dr George Ferzoco, Leicester University, UK. 7.30pm, English Common Room, G14 Arts Building.



There will be no issue of UWANews for July 14 due to the mid-year break.

Please supply Campus Diary entries to Joanna Thompson by July 16 for the July 28 issue.

Telephone: 9380 3029

Facsimile: 9380 1162

Email:

joanna.thompson@uwa.edu.au

Tuesday 8 July

FRIENDS OF UWA GROUNDS LECTURE

'Birds in the grounds and surrounds', Clive Napier, Birds Australia. Clive will speak about the bird life found in the grounds of UWA and on the nearby foreshore. 7.30pm, Ross Lecture Theatre, Physics Building.

HISTORY SEMINAR

'Doctoring the urban environment, 1350-1800', Dr Mark Jenner, University of York, UK. 4pm, First Floor Tea Room, Arts Building.

Friday 11 July

PUBLIC TALK

'Women's work, theory and practice', Dr Annette Pedersen. Dr Pedersen will discuss feminist art theory and the contemporary climate for feminist art practice, with particular reference to works in the exhibition Women's Work: Aspects of Female Art Practice in Twentieth-century Australia' at the Lawrence Wilson Art Gallery until 6 August. 1pm, LWAG.

Monday 14 to Friday 18 July

RESEARCH SYMPOSIUM

Water: histories, cultures, ecologies. A unique inter-disciplinary research symposium on the future of water which features local and international representatives from academia, industry, community, and government. A major focus will be putting Australia's current water crises in global perspective. Major themes include 'Making Knowledge Visible', 'Cultural Environments, Practices and Interpretations', 'History and Culture of Ecology and Climate' and 'International Experience'. The intention of the symposium is to explore past and present understandings, uses and managements of water; formulate an action plan for Western Australia's water future; and open this discussion to a wider audience of concerned citizens. An art exhibition titled 'Jila Jumu Jiwarri Wirrkuja' will display paintings about water by indigenous artists from the Mangkaja Arts in the Kimberley, Western Australia. The exhibition will open on 14 July at the

Cullity Art Gallery, School of Architecture, Landscape and Visual Arts. Registration fees apply. For details please refer to programs and activities on <http://www.ias.uwa.edu.au/> or email iaswater@admin.uwa.edu.au.

Wednesday 16 July

NINGALI LAWFORD TALK

Actor, writer and performer Ningali Lawford will be giving a speech at the WATER: histories, cultures, ecologies symposium dinner. The symposium is being convened by the Institute of Advanced Studies, the Centre for Water Research, and the disciplines of History and Anthropology. The dinner will be held at Matilda Bay restaurant at 7pm. All are warmly welcome to attend the dinner. There is a special rate of \$70 for non-symposium participants. If you wish to attend the dinner please return the booking form which can be found under activities and programs on the Institute of Advanced Studies website at www.ias.uwa.edu.au together with your payment details, or call the Institute on 9380 1340 for further details.

Friday 25 July

CLIMA SEMINAR

'Innovative pasture legumes for novel applications in Mediterranean farming systems', Dr Angelo Loi. 4 to 4.30pm, CLIMA Seminar Room.

'Pasture/animal nutrition interaction', Dr Colin White. 4.30 to 5pm, CLIMA Seminar Room.

PUBLIC TALK

'Female art practice: strange fruit indeed!' Dr Clarissa Ball. Dr Ball presents an analysis of several artworks in the exhibition Women's Work: Aspects of Female Art Practice in Twentieth-century Australia' on display at Lawrence Wilson Art Gallery until 6 August. 1pm, LWAG.

ADVANCE NOTICE

Monday 28 July

PUBLIC LECTURE

'Managing mental health in the work and study environment', A/Prof Geoffrey Riley, Associate Dean (Student Affairs), Faculty of Medicine and Dentistry. 1 to 2pm, White Lecture Theatre. For further information call the Equity and Diversity Office on ext. 3873 or 3791.

Saturday 9 August

PERTH MEDIEVAL AND RENAISSANCE GROUP ELEVENTH ANNUAL CONFERENCE

'Intersections of sacred and secular in medieval and modern culture.' 9am to 5pm, St Catherine's College. For registration details, contact the discipline of English.



What's On Next

Places are still available in the following workshops:

- *Staff Orientation*, Thursday 17 July
- *Preparing to Apply for Academic Staff Promotion* – Wednesday 13 August
- *Career Opportunities Workshop for General Staff* – Thursday 14 August

REMINDER: *Foundations of University Teaching and Learning* will be held from 14 to 16 July. If you missed the July intake, register early for the February intake.

Registration dates are due to close in July.

Further details are available at

www.csd.uwa.edu.au/programme/

or by contacting OSDS on ext. 1504 or csdoffice@csd.uwa.edu.au

Keep your eyes out for our 'new look' Semester 2 Programme Flyer available mid-July.

administration • IT/computing • technical • executive

workskillsprofessionals

temporary & permanent personnel



Need temporary, contract or permanent staff?

Workskills Professionals are *proud to be a wholly owned and operated WA Company* and are preferred suppliers to State and Federal Government agencies. Supplying staff in the areas of:

- Administration/Clerical
- IT/Computing
- Professional/Technical
- Skilled/Unskilled Labour

We have been supplying candidates with previous tertiary (University) experience to UWA since 1993. We have developed a Star Education Performers list to capture these experienced people, enabling us to deliver a fast quality service.

Try us — we are sure you will notice the difference

Give our friendly staff a call on

Ph: (08) 9201 7777 Fax: (08) 9201 7778

requestwa@workskillsprofessionals.com.au

www.WorkskillsProfessionals.com.au

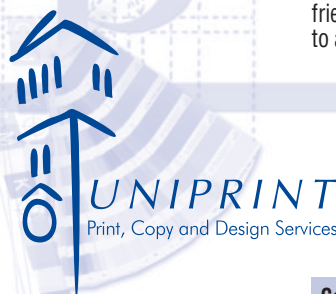
CORPORATE
MEMBER
OF RCSA



Quality
Endorsed
Company



THE UNIVERSITY OF
WESTERN AUSTRALIA



UniPrint is UWA's in-house printshop. We provide a friendly and efficient print, copy and design service to all areas within the University.

- Graphic design and typesetting
- Digital copying
- General printing
- Sale of course readers
- Assistance with UWA and faculty branding guidelines
- On-campus copying
- Daily delivery and pickup

Contact Ray Horn on 9380 8790 or David Prior on 9380 8791 to discuss all your printing needs.

Email uniprintjobs@admin.uwa.edu.au Website www.uniprint.uwa.edu.au

UniPrint 28403

Research Grants & Contracts

Continued from front page

DANISH GOVERNMENT

Dr Philip Vercoe, Animal Biology: 'Support funds for international postgraduate scholar, Claus Christopherson'— \$70,215 (2003-05).

DEPARTMENT OF TRANSPORT OFFICE OF ROAD SAFETY

Dr Lucia Cercarelli, Population Health: 'Repeat drink driver and drug driving expert working group projects'— \$48,707 (2003).

GOLDER AND ASSOCIATES

Prof Martin Fahey, Civil and Resource Engineering: 'City Rail project'— \$39,400 (2003).

JM O'HARA RESEARCH FUND

A/Prof Kenneth Ilett, Medicine and Pharmacology: 'Dexamphetamine and breastfeeding'— \$9775 (2003).

LAND AND WATER AUSTRALIA

Dr Peter Davies, Faculty of Natural and Agricultural Sciences: 'Gippsland Riparian project'— \$9800 (2002).

MEDELA AG, BAAR, SWITZERLAND

Prof Peter Hartmann, Biomedical and Chemical Sciences: 'Physiology and biochemistry of milk removal in lactating women'— \$1,417,040 (2001-04).

NHMRC – PROGRAM GRANT THROUGH UNIVERSITY OF MELBOURNE

Clin/A/Prof Graeme Hankey, Medicine and Pharmacology: 'Translational research in stroke'— \$1,500,000 (2003-07).

THE APEX TRUST FOR AUTISM

Miss Elizabeth Pellicano and **Prof Kevin Durkin**, Psychology: 'The construct of central coherence: does it cohere and is it central to autism?'— \$5291 (2003).

UWA RESEARCH GRANTS SCHEME

Dr Andrew Millar, Biomedical and Chemical Sciences: 'Analysis of glutathione-s-transferases and associated proteins induced by salicylic acid signaling in the plant defence response'— \$13,000 (2003).

Classifieds

TO LET

SOUTH SCARBOROUGH, VILLA, 3 brms, lounge, dining, aircon., retic. from a bore just painted throughout, unfurnished. \$220 p.w. One of four with own street address and garage and small garden. Ring Sue Lewis on 2116.

WELL PRESENTED BRICK/TILE CHARACTER HOME with plaster ceilings, polished jarrah floors, lead light windows. Formal lounge with fireplace and French doors leading to formal dining, three bedrooms (or two plus one study), 1 bathroom, spacious laundry, modernised kitchen with good quality appliances. Single garage, shed, easy-care reticulated front and rear gardens, complete security with alarms. Stroll to lake or parks, sporting clubs, shops, restaurants, schools, university, hospitals and public transport at doorstep. Initial lease term six months to 3/1/2004 (option for extended lease). RENT \$325 p.w., free of letting fees. For enquiries and inspection contact Ramesh on 0405 056 215 (M) 9382 2073 (H).

NEDLANDS, Park Road, \$250/week, double storey front town house with private courtyard and glorious northern/winter sun. Refurbished with terracotta tiles granite/timber-look deluxe kitchen and imported llve appliances. Comprising 3 bedrooms formal lounge, separate dining, 2 WC's, aircon., storage room and carport. Close to transport, QEII, SCGH, CSIRO, UWA and Hampden road cafes and restaurants. Available in July. Contact 9386 6139 or yogesan@cyllene.uwa.edu.au.

WANTED

POT BELLY STOVE, any condition for outside use. Phone Graeme on ext. 3020 or 040 714 3398.

WANTED TO RENT

SMALL APARTMENT/HOUSE to rent/housesit near UWA for couple visiting from 25 Sept to 12 Dec. Email mary.flaherty@ucd.ie.

POSTED ABROAD? We seek long-term home exchange or housesit in early January 2004, for 12 months or more. Our home: luxury custom home in scenic Sedona, Arizona. 250sq m, 3 brm. 3 bath, spectacular views. Dream hiking, wildlife, 2 golf courses, resort spa nearby. We require at least 2 brm, 2 bath, within reasonable distance of MLC. Security: bond, references available for housesit option. For home exchange, shared cultural background and local knowledge should provide peace of mind to both parties. Contact: David Atkinson, PO Box 20302, Sedona, AZ 86341 USA. TEL/FAX: (928) 284-1222. Email: atkinson@sedona.net.

**Classified advertising is free
to all university staff.**

To place your advertisement email
**joanna.thompson
@uwa.edu.au**

Redundant Equipment for Sale

ITEM	PRICE	AGE	COND.	DEPT.	CONTACT
Blue and white 350MHZG3 desktop 128MB zip 100	\$100ono		Good/Poor		Amanda ext 3879
Apple Studio Display 17"	\$150	—	Excellent		Amanda ext 3879
MACIIVX	\$30	—	2		Amanda ext 3879
Apple color RGB monitor	\$30	—	2		Amanda ext 3879
Apple vision 1710 Display	\$50	—	2		Amanda ext 3879
Apple Multiple Scan 15 Display	\$30	—	2		Amanda ext 3879
Apple Multiple Scan 17" Display	\$50	—	2		Amanda ext 3879
Apple vision 1710 Display	\$50	—	3		Amanda ext 3879
Power Mac 7300/200 +Jaz drive	\$100	—	2		Amanda ext 3879
Power Mac 7300/180	\$100	—	2		Amanda ext 3879
Power Mac G3 Power PC (Beige)	\$100	—	2		Amanda ext 3879
Encore P-401 set speakers	\$10	—	2		Amanda ext 3879
Quantum 170MB ext drive	\$5	—	—		Amanda ext 3879
Pent II	\$50	—	3		Amanda ext 3879
Power Mac 450MHZ G4 dual processor DVD-RAM writable + Apple Studio Display 21"	\$3700ono		1		Amanda ext 3879
Bindomatic 5000 thermal binder with stock	offers	6	2	library	Tim ext. 8554
Epson LQ 870 dot matrix printer	offers	—	3	library	Tim ext. 8554
GBC IM2000-1 coil binder	offers	—	2	library	Tim ext. 8554
Kyocera FS-3570 laser printer (includes two cassettes)	offers	3	1	library	Annie, amacnab@library.uwa.edu.au

Bids should be accepted by Monday 14 July with schools to have first option

Schools are reminded that all University equipment available for sale must be advertised in the **UWAnews**. Receipts should be PeopleSoft account coded 490 (computing with barcode), 491 (non-computing with barcode) or 493 (items with no barcode). If equipment has an existing barcode please contact extension 3618/2546 for details.

CONDITION refers to the general condition of item (1 = as new; 2 = good; 3 = serviceable; 4 = unserviceable). AGE refers to the nearest year.