Expats come home—we need you

Australia is losing vital "human capital" because of young professionals who go overseas to work, not returning, a Monash academic asserts.

Professor Phyllis Tharenou, of the Department of Management in the Faculty of Business and Economics, said Australia is experiencing the largest ever emigration of people aged between 21 and 35. It is estimated that one million Australians are currently working overseas, and 350,000 of them are from Victoria.

"This exodus means we are not returning the knowledge to Australia where it is needed to develop our own industries. This will harm our economy because it will deprive us of vital talents for our country's future prosperity," she said.

Professor Tharenou has completed a study, funded by an Australian Research Council (ARC) Discovery Grant, to find out why Australia's young professionals relocate abroad to work.

"In surveys of young people while they were university students and after they graduated into full-time jobs, I identified the plus points of working abroad as cross-cultural experience, travel opportunities, and increased pay," she said. "I also uncovered deterrents, including loss of family, personal and social ties, political instability, lower-living standards and culture shock."

The research showed that young employees who developed an interest in working abroad had little family influence on their decision, no partner, high expectations of positive outcomes, an international focus, and had a high level of self-confidence about working abroad including in developing countries.

Professor Tharenou will use the study results to suggest ways the public and private sectors can persuade overseas employees to come home

"I bring found that a major factors among young people don't return is because they do not believe it will benefit their career to do so," she said.

"Most people want to come back, but their companies do not have repatriation policies to allow this."—Professor Tharenou

Professor Tharenou has now received another ARC Discovery Grant to look at how Australian companies source staff for international work.

"My study has already found that most people want to come back, but their companies do not have repatriation policies to allow this.

"When an international firm has a young employee they know is highly disposed to an international career, they could target that person and offer them a two-to-three year stint abroad, but then bring them back.

"Those workers should know that, at the end of that term, they will return to a comparable or better position in Australia. I suspect a lot stay away because their prospects upon returning home to the same company are somewhat soft and ill-defined."

Professor Tharenou said the Victorian government recognised the brain drain problem. In July, it launched an online database and resource, the Victorian Expatriate Network.

"It is great that the Victorian government has recognised the brain drain problem. It is a very effective way of staying in touch with them and keeping them in touch with each other," she said.

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Monash South Africa students make history

Three years ago in South Africa, a group of students took a chance and joined the country's newest tertiary institution, Monash South Africa (MSA).

Although they knew little about Monash University, the students were attracted by its international perspective and state-of-the-art facilities.

On 27 November, 20 of these students became the first to graduate from the campus in Johannesburg.

The graduation ceremony was attended by family and friends as well as academics and dignitaries including Monash chancellor Professor Richard Larkins, Monash South Africa pro vice-chancellor Professor John Anderson, and Australian High Commissioner to South Africa Mr Ian Wilcock.

Graduate Mr Kai Grunwald, who was awarded the Monash South Africa Award for Excellence Scholarship for achieving the highest mark in his level throughout his time at MSA, said it was a proud moment for all the students.

"There are some very talented people graduating here today. Take head of there names—you will be hearing from them again," he said.

Mr Grunwald completed a Bachelor of Business Systems and has joined a new company in Roodepoort, Johannesburg.

"Among Monash's best assets are its lecturers," Mr Grunwald said. "They have not only taught us about our subject areas but also provided us with lessons in life. We view these lectures with tremendous gratitude."

Mr Grunwald said he plans to continue his studies through off-campus learning with Monash in Australia.

Mr Ellis paid tribute to the staff at MSA and congratulated the students.

"This event marks a important milestone in the life of the university and, of course, the lives of the graduates," he said. "You should feel proud to be graduating from a university that is truly a world-class tertiary institution."

As the first graduates here, you have been key to establishing the university in South Africa."

Mr Larkins said Monash was pleased to be able to play some part in regional development.

"Monash believes it contributes to South Africa and Africa in a range of areas including educational development, engineering, IT, environment and health," he said. "We also hope that one of you takes your graduates to away with you as a commitment to give something back to this community."

Professor Anderson told the graduates their degrees were internationally recognised and would be passports to the future. "Many of you will travel around the world, but it is my hope that you will then come back to Africa and make your mark here," he said.

Established in 2001 in Roodepoort in Gauteng province, Monash South Africa currently has 350 students in its faculties of arts, business and economics, and IT.

Proud: Mr Kai Grunwald.

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Topping a big year at Monash

Another $10.3 million in NHMRC grants takes the total to more than $32 million for 2003.

See page 3
Distinguished meteorologist Professor Karen Francis has been appointed to the chair of meteorology in the School of Mathematical Sciences at Monash University.

Over the past decade, the university has increased its support for meteorology and has played an important role in the field in Australia and internationally, Professor Francis said. "This is a significant contribution for Monash. The position is the place to do university-based meteorological research in Australia while reinforcing the university's already good ties with the Bureau."  

In 1985, Monash and the bureau signed an affiliation agreement that enabled postgraduate students to work at the bureau towards their degrees. Dozens of Monash students have made significant contributions in Bureau of Meteorology projects, ranging from short-term modelling to international field deployments.

"It's a huge effect on our weather that we get from the Bureau's research. It's a national responsibility." Professor Francis said. "I'm particularly interested in the physics of how we forecast weather. It's a real mathematical problem."

"The chair is central to Monash and the region's role in meteorology," said Professor Merran Evans, head of the School of Music. "The chair was central to the decision to set up a Chair of Meteorology as the place to do university-based meteorological research in Australia, while reinforcing the university's already good ties with the Bureau."

The holder of the new chair, Professor Karen Francis, is a leading researcher in global atmospheric climate change and tropical cloud formation. She has made significant contributions in Bureau of Meteorology projects, ranging from short-term modelling to international field deployments.

"It's a huge effect on our weather that we get from the Bureau's research. It's a national responsibility," Professor Francis said. "I'm particularly interested in the physics of how we forecast weather. It's a real mathematical problem."

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Genome solved – hunt for vaccine targets begins

**Microbiology**

The genes of a bacterium that can kill or cause permanent organ damage in humans have been identified by Monash University researchers, whose efforts are now focused on finding a suitable vaccine.

Professor Ben Adler from the Department of Microbiology led Australia’s first bacterial genome project that has identified the genes of the bacterium *Leptospira*. The team has now begun work on finding targets for a vaccine against *Leptospira*, which causes the disease leptospirosis.

“Leptospirosis is an infection of some importance both around the world and in Australia, especially in farming communities,” Professor Adler said.

The disease is transmitted to humans by animals and in Australia typically causes non-fatal infections. However, in a small number of cases, it can be fatal – in Australia, leptospirosis is most common among dairy and pig farmers and banana plantation workers who are infected through contact with rat urine.

The bacterium also infects animals and can cause abortions in pigs and sheep. In animals, leptospirosis can result in a drop in milk production.

Professor Adler said most mammals have co-evolved with species-specific strains, or serovars, of *Leptospira*. The host can have no symptoms but still transmit these strains to humans.

Professor Adler worked with Dr Dieter Balbach and others in the Department of Microbiology, Dr Rich Zweer in the Department of Agriculture and a team led by Dr Elizabeth Kuczek at the Australian Genome Research Facility. By determining the genetic sequences of two strains of the Hardus serovar of *Leptospira*, the team was able to identify common and unique components of the bacterium’s two circular chromosomes – 3111 genes on the large chromosome and 292 on the small one.

“By knowing every single gene that the organism has, we can predict which genes produce the antigens that are potentially important in immunity.”

The *Leptospira* vaccines that exist at the moment are not suitable for humans and are only effective against individual serovars. With the genome, we can find surface proteins that are common to all serovars of *Leptospira* and use these as the basis for a single vaccine,” Professor Adler said.

Contact: ben.adler@med.monash.edu.au

**Mining in touch**

**Virtual reality**

The abstract world of virtual reality has joined with the earthy environment of minerals mining, due to innovative work by Monash University’s new Bionics and Mining in touch Mining in touch Centre.

In touch with technology: The unique Tactile Display System (TDS) that measures movement and touch separately, and provides a complete virtual touch that will ultimately lead to ‘whole body’ virtual environments in which people can be fully immersed.

Mining in touch is increasing at an alarming rate. “We hope to find technologies and training that will ultimately lead to ‘whole body’ virtual environments in which people can be fully immersed,” acting director of the centre Dr Barry Richardson said.

The research centre is currently funded through a $300,000 Commonwealth Government grant, one of only nine successful applications in a field of 150 applications.

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**$10.3 million NHMRC grant success**

Monash University researchers have been awarded $10.3 million by the National Health and Medical Research Council (NHMRC) for 28 new research projects. This money is additional to $21.8 million awarded by the NHMRC to Monash earlier in the year. The two funding injections bring the total of major NHMRC grants to Monash to just over $52 million – topping a great year for the university.

The latest grants will fund projects to include investigations into improving the use of antibiotics; the effectiveness of new treatments for spinal fractures caused by osteoporosis; the proteins that make malaria-infected blood cells sticky; and education and training for parents of adolescents with autism.

Researchers from the faculties of Medicine, Nursing, Science, Business and Economics will receive $10,269,837 of the $165.8 million the NHMRC has made available for this year’s project grants.

**Monash Change of Preference Information Sessions**

Monash Change of Preference Information Sessions

It’s crunch time. Staying late is still months away, but you only have a few days to choose the right one. There’s no better place to spend the next few years of your life than at Monash University. Find out why at our Change of Preference Information Sessions:

- **Gippsland**
  - January 16, 3-6 pm
  - Churchill campus

- **Metropolitan**
  - Tuesday 16 December, 3-6 pm
  - Clayton campus

- **Churchill**
  - Tuesday 16 December, 3-6 pm
  - Churchill campus

- **Gippsland**
  - Wednesday 17 December, 10 am – 2 pm
  - Clayton campus

For more information:

- **Contact:** penny.fannin@arts.monash.edu.au

- **Ph:** +61 3 9902 6582

**MONASH University**
City Chambers

Monash's new Law Chambers, located in the centre of Melbourne, were officially opened in July by Federal Treasurer Mr Peter Costello. 

Mr Costello, who holds two degrees from Monash, praised the City Chambers located in the centre of Melbourne in July by Federal Treasurer Mr Costello.

He said the chambers were fitted with state-of-the-art computer laboratories, modern conference rooms and study rooms, study rooms and online access to Monash libraries.

Childless by choice

A study this year by the School of Political and Social Inquiry, in the Faculty of Arts, revealed some surprising reasons for Australia's declining birth rate.

It found that paid maternity leave and policy initiatives such as the Federal Government's 'baby bonus' have had limited impact on the decision to have children.

Findings suggest that women are far more concerned about access to long-term flexible workplace, childcare availability and extended family support than with narrow and short-term financial benefits.

Building post-Soviet knowledge

The Faculty of Education has helped rebuild the education system in the former Soviet republic of Kazakhstan. Professor Terri Soltis, Professor Sue Willis, Associate Professor Tony Townsend and Ms Marilyn Fleer from the Faculty of Education worked with Soros-Kazakhstan and the Kazakhstan Committee of Education on several projects designed to improve the education system.

Rural pharmacy entry scheme

Monash has introduced a new rural pharmacy entry scheme, beginning in 2004, to help alleviate the shortage of rural pharmacists in Victoria.

The Rural Entry Scheme will give students from rural and remote areas an enhanced opportunity to gain entry to the highly sought-after Bachelor of Pharmacy degree. It includes a Pharmacy Rural Scholarship, valued at $6000 a year, to be awarded to the highest-ranking applicant from a rural area.

Drugs for diabetes

A drug to prevent or delay the complications experienced by people with Type I and Type II diabetes is being tested for its effectiveness by researchers Dr Onuma El-Kabany, Dr El-Kabany, a senior lecturer in Monash's Department of Medical Chemistry, has been examining how an altered amino acid in the drug binds to an enzyme called aldose reductase, which converts glucose into a sugar alcohol called sorbitol.

Laugh detectors

Associate Professor Arkady Zaslavsky and his colleagues from Monash's School of Computer Science and Software Engineering are developing systems that recognise people by their laughter, and 'smart' mobile phones with in-built personal assistants that can take messages and advise that their owner is in a meeting.

The research is part of a broader field called mobile and pervasive computing.

Space success

Monash mathematician Dr Andrew Perretti's 25-year-old theory that Jupiter's fifth largest moon Amalthea, discovered in 1992, was actually a 'captured' asteroid and not a newly formed satellite or moon of Jupiter was recently confirmed through data collected by the Galileo space probe's mission to Jupiter.

The Galileo mission came to an end in September but not before many of Dr Perretti's other mathematical predictions about Jupiter were also proved.

Dr Perretti, one of the world's foremost experts on the formation of the solar system, will work at NASA next year in preparation for the next mission, destined for Saturn.

Controlling crazy ants

The yellow crazy ants that are decimating Christmas Island's world-famous red crab population and damaging the island's ecology have been stopped in their tracks by an aerial baiting campaign developed by a team from Monash and Parker Australia.

Dr Dennis O'Dowd and Dr Peter Green from the School of Biological Sciences played a pivotal role in designing and coordinating the control program. Data collected from 50 monitoring stations across the island indicated that the baiting had achieved immediate control of all known crazy ant supercolonies.

New face for fine arts

The redevelopment of the landmark Fine Arts building at the Caulfield campus was opened in November.

The extensive redevelopment of the heritage-listed building created state-of-the-art studios for drawing, painting, printmaking, photography and typography, as well as workshops and project spaces.

Monash Art and Design dean, Professor John Redmond, said the opening of the building represented an important milestone for the faculty.

Snifferbots

Associate Professor Andy Russell from Monash's Intelligent Robotics Research Centre has created an 'odour-sensing robot' that might one day replace sniffer dogs in detecting drugs, explosives and gas leaks.

The RAT (reactive autonomous tethered) robot is able to sniff its way through a maze of tunnels to track down a chemical odour.

Dr Russell is also developing a learning robot called ADAM (AMPart Mobile), which is currently learning how to travel around a wooden enclosure in the most energy-efficient way. Learning robots could in future be used to perform household tasks such as vacuuming.

Up to 10 per cent of children have a condition that causes them to walk on their toes, a habit that can cause hip and back problems later in life.

Professor David Morgan and Dr Paul Percival from Monash's Centre for Biomedical Engineering are working with staff at Monash Medical Centre to devise exercises that strengthen the calf muscles of these children.

Children already using the exercises have developed longer calf muscles and are able to place their heels on the floor and walk with a normal heel strike.

MEDICINE

Gulf war effects

The first comprehensive health study of Australia's 1991 Gulf War veterans has found they are more likely to develop psychological disorders than members of the Australian Defence Force who had not been deployed there.

The study, by researchers from Monash's Department of Epidemiology and Preventive Medicine, revealed that Gulf War veterans were at increased risk of developing post-traumatic stress disorder and also more commonly developed other anxiety disorders, depression and substance use disorders including problem drinking.

Surgical simulator

A virtual reality surgical simulator developed at Monash could have a dramatic impact on safety standards and skill levels in hospitals worldwide. The simulation, developed by the Department of Obstetrics and Gynaecology and Monash's Centre for Biomedical Engineering, will enable surgeons to master keyhole techniques that are being used for an increasing number of operations.

It allows surgeons to 'operate' on a 3D patient where they can feel the weight and texture of tissues and organs.

Rural GP shortages

Monash University PhD researcher Dr George Somers found that lack of income, limited access to community facilities and restricted professional opportunities for their partners were the major issues disturbing medical students from taking up a rural career. He said a rotation with a rural GP could help students address or reduce these concerns.

BUSINESS AND ECONOMICS

High scores for Monash MBA

The Monash MBA was named among the top MBA programs in Australia during 2003. It was ranked as the best in Victoria and third in Australia by leading magazine The Australian Financial Review's B2B magazine placed it in the top five of Australian MBA programs, and its marketing management program received a five-star rating in the graduate management programs section of the 2004 Good Universities Guide. The Economist Intelligence Unit of The Economist magazine also ranked the Monash MBA as one of only five Australian MBA programs to be ranked in the world's top 100.

Monash's MBA and MBA Centre, located at the Caulfield campus, was officially opened by the Victorian Premier, Mr Steve Bracks, in April.

Islamic banking conference

Monash University Malaysia, which is conducting leading research into Islamic banking, hosted an international conference on the subject at the Monash Centre in Prato in September.

The conference, attended by researchers, academics and industry leaders from around the world to discuss the social and ethical dimensions of Islamic banking and its global spread. Islamic banking, with about $500 billion in global assets, is growing by 15 per cent a year, and about 10 per cent of banking in Malaysia is now Islamic.

Professor Jayne Godfrey, head of Monash's Accounting and Finance departments, told the conference that Islamic banking was now a major financial force in some countries and was making inroads into Western society.

Safe cars

The latest intelligence systems in cars are being tested by the Monash University Accident Research Centre (MUARC) in what is the first study worldwide to assess the effects of these systems on driving performance.

Fifteen Ford passenger cars have been fitted with the Intelligent Transport Systems, such as a traffic-monitoring system and a sensor to warn if a reversing car is about to hit other objects, which are designed to improve safety and reduce road accidents.

The Safercars project will assess whether cars fitted with systems make people drive safer during and after using them.

Tractor safety

MUARC researchers are recruiting farmers and farm workers to participate in an Australian-first study that will determine the factors that place farm workers to one of the most high-risk injury categories of any industry.

Dr Lesley Day from MUARC is coordinating the four-year Farm Injury Risk Among Men (FIRM) study, which will involve 900 farmers and farm workers from throughout rural Victoria.

In Victoria, about 300 injured farmers and farm workers are admitted to hospital each year and a further 840 present to hospital emergency departments with their injuries.
**APPOINTMENTS**

**Vice-Chancellor**

In September, Monash welcomed its new vice-chancellor, Professor Richard Filed. A 1986 graduate, he has enjoyed a distinguished career in scientific research and academic management.

**Deputy Vice-Chancellor**

Monash dean of Law Professor Stephen Parker was appointed deputy vice-chancellor in June. Monash chancellor Mr Jerry Ellis said Professor Parker would strengthen the senior executive of the university with his widely acknowledged ability as a distinguished academic, planner and administrator.

**Deputy Vice-Chancellor (research)**

Biochemistry leader and experienced research administrator Professor Edmund Cook said it was to join Monash as its new deputy vice-chancellor (research). Professor Cook arrives at Monash in early 2004 from the University of Adelaide, where he also was deputy vice-chancellor (research). He is a former research and development director and managing director of Florigene Ltd, a plant biotechnology company that developed and successfully commercialised some of the world's first genetically modified plants.

**Pro Vice-Chancellor**

Family medicine expert and professor of general practice education at Monash Professor Marilyn Liddell took up the position of pro vice-chancellor at the university's Malaysia campus this year, replacing Professor Bob Bignall, who returned to Monash in Australia.

**Faculty deans**

Three new deans have been appointed at Monash during 2003. Professor Tam Sridhar was named dean of the Faculty of Engineering. Previously, he was head of Chemical Engineering at Monash. Professor Sridhar was elected a fellow of the Australian Academy of Technological Sciences and Engineering in 1995, and in 2002 became only the second Monash engineer to be elected to the Australian Academy of Technological Sciences and Engineering.

In November, pioneering neuroscientist Professor Edward Byrne commenced his appointment as dean of Medicine, Nursing and Health Sciences. He was formerly director of the Centre for Neuroscience and professor of experimental neurology at the University of Melbourne.

Eminent criminologist Professor Arie Freiberg will take up his position as dean of the Faculty of Law in January 2004. Before his appointment, he was dean of the Faculty of Law at the University of Melbourne. Professor Freiberg also spent 15 years at Monash from 1976 to 1990, rising from the rank of tutor to made in law.

**ACHIEVEMENTS**

**Four Monash Fulbrights**

Four Monash academics and graduates were this year awarded Fulbright Scholarships to undertake research and further studies in the US. Senior Fulbright Scholarships were to Professor David Knollys, director of the Centre for Human Rights Law, and Professor Gill Ristil, director of the Centre for Analytical Research at Monash Institute of Reproduction and Development. Postgraduate Fulbright Scholarships were awarded to commence study and first class honours law graduate Mr Danny Rosen, and geography and environmental science graduate Mr Dyla Tagar.

Professor Kinley will use his Fulbright Scholarship to research human rights and the global economy at Washington University College of Law, the American University, Washington DC.

**Mural unveiled**

In October, a tile mural was unveiled at Monash's Clayton campus to commemorate the tragic shootings three one-year before. The travelling was held on the 90th anniversary of the shootings in which economist students Mr William Wu and Mr Steven Chan died. Arts law student Mr Katherine Ryan, above, conceived the idea for the mural and managed the production of the permanent display of more than 200 hand-painted tiles by students and staff.

**MONASH REMEMBERS**

**INFRASTRUCTURE**

**Synchrotron successes**

Work on the Australian Synchrotron at Monash University is well under way with excavators and other equipment preparing the site for the first phase of construction.

Construction company Thiess is designing and constructing the building to house the $206 million synchrotron, which is due for completion in 2007. Monash postdoctoral fellow Dr Bayden Wood was one of six Australian scientists to this year receive a three-year Australian Research Council (ARC) Postgraduate Program Fellowship. The fellowship will allow Dr Wood, a researcher at Monash's Centre for Biospectroscopy, to access overseas research facilities.

**GRANTS**

**Support for projects**

Research into better antibiotics and into new treatments for spinal injuries caused by scoliosis were among the dozens of Monash projects funded by the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) this year.

Monash is leading two new ARC centres. One is developing intelligent machines that interact with their environment, and the other is focusing on health issues, particularly those among disadvantaged groups.

Monash and Tsinghua University were among the 10 universities at which the 1000 students studying at Monash were located.

Earlier this year, Monash entered a special arrangement with China's Tsinghua University to enable the two institutions to deliver postgraduate degree programs at each other's campuses.

The agreement was formalised at a signing ceremony at Monash in February between the then vice-chancellor, Professor Peter Darvall, and Tsinghua vice-president Professor He Jiankun. The joint delivery of postgraduate degree programs will strengthen both Monash-Tsinghua academic cooperation and links between China and Australia.
This year’s Victorian Rhodes Scholar, student Mr Lucas Bluff, has capped years, students from Monash have to Monash again and particularly for biological sciences off a Rhodes Scholarship ‘hat-trick’ at Oxford University. Nathan Grills and Ms Geraldine Rhodes Scholars for 2002 and 2003 Buckingham were named the Victorian Bluff, who spent this year completing part of Monash’s Science Scholar Program, will be studying for his PhD at Monash University’s Peninsula campus.

“Some of the significance of my win is just beginning to sink in,” Mr Bluff said. “The challenge of undertaking doctoral research is great – that it will be at Oxford is better, and receiving the Rhodes tops it off. I’ll be studying under Professor Alan Kaczmarski, who heads the Behavioural Ecology Research Group. He has been tremendously helpful throughout the application process, so I’m glad to be able to pay him back with a few years of research.

So far the plan is to study the rationality of animal decision-making in an evolutionary context, possibly focusing on European starlings and New Caledonian crows, the main model used by the group.”

And while Mr Bluff is working towards a career in biology, he does have wider ambitions: “The successful co-existence of humans and nature requires an increased public awareness of science. I aspire to enhance this awareness.”

He acknowledged the role of Monash’s Biogeochemistry School in contributing to his success, saying that the last few years of biology had been enjoyable because of the dedication of the academic, administrative and technical staff of the school.

“Most of my referees for the Rhodes were biologists, and there is no way I could have won it without their help. My study at Oxford will probably build on the work I’ve done at Monash, which demonstrates the quality of research in the school.”

Mr. Bluff’s win was a boost for the education, particularly for biological sciences at Monash. “We’re privileged to have attracted and developed such a brilliant young man, with a flawless academic record, who is interested in the research about what he’s doing,” he said. The Rhodes Scholarship is awarded each year to 20 students from 28 of the world’s top universities to study at Oxford University for two years, with the possibility of extending to a third year, and covers tuition fees, return airfares and living allowance.

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Children draw their thoughts

What do children really think about the environment? And what can we learn about their innermost thoughts by analyzing their artwork? These questions were the focus of a recent seminar, presented by visiting Swedish educationalist Associate Professor Eva Alery at Monash University’s Peninsula campus.

At the invitation of the Education faculty, Dr Alery and a group of her students visited classrooms of young students and drew the environment in the form of drawings by a group of young Swedes aged seven to 16 years. The study demonstrated the value of using art to reveal children’s thoughts about specific topics – thoughts that Dr Alery believes can form the basis of worthwhile teaching and learning interactions.

The 109 study participants were asked to assign an emotional state to their drawings and to explain what they had drawn and why. What do you think about when you hear the word environment? by making a drawing using water pencils, crayons or water-colours.

"They also had to reflect on their own thoughts, when I asked each child to tell me what he or she was thinking about when making the drawing," said Dr Alery. "The children were asked to talk about their paintings and symbols and actions protecting the environment.

"Good-world-themed drawings commonly reflected the environment as clean, beautiful and idyllic, while drawings focusing on the bad world depicted various environmental ills such as cars exhaust fumes, factories, toxic waste and litter." Dr Alery added.

"For instance, one boy's drawing showed a postbox and a pile of trash littering the ground on the bad side, contrasted with a bicycle and a shark can containing the litter on the good side," Dr Alery said. "The final theme, of protecting the environment, was evident in drawings of a cross cut from the environment to the good-world category, and there were more common among the younger children and the girls, whereas bad-world drawings were more common among the boys. Drawing portraying the conflict between the good and bad was featured in all drawings of the two themes, often with one side of the paper depicting the good world, and the other side displaying the bad. These drawings were much more common among the older group, and the boys.

"The various pressures they pointed out included the destruction of plants and animals, restrictions in working with these refugees and the impact of the TPV regime on Australia," Dr Pickering said.

"The various pressures they pointed out included the destruction of plants and animals, restrictions in working with these refugees and the impact of the TPV regime on Australia," Dr Pickering said.

"The TPV regime should be recognised as a purely punitive policy affecting a vulnerable and traumatised population and should be abolished," Dr Pickering said.

Contact: lucas.bluff@sci.monash.edu.au

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Call to abolish temporary protection visas

Researchers from Monash and Charles Sturt universities have called on the Federal Government to abolish the Temporary Protection Visa (TPV) system for dealing with ‘unauthorised’ refugees attempting to settle in Australia

The call has been made in a recent study of the impact of the TPV regime on NSW providers of refugee settlement services including health and education.

Researchers Dr Sharon Pickering, of Monash’s School of Political and Social Inquiry, and Dr Michael Gard and Ms Roslyn Pickering, of Charles Sturt’s School of Human Movement Studies, found the regime created large negative outcomes for both refugees and settlement service providers.

Since late 1999, refugee bypassing official immigration processes and arriving in Australia by boat from countries including Iraq, Afghanistan and Iran have been subject to TPVs. Dr Pickering said this means they face “rational uncertainty” about how long they can remain in the country.

A TPV provides refugees with a limited range of the benefits awarded to Permanent Protection Visa holders including family reunions and the full range of settlement services.

Many TPV holders have not been able to access Commonwealth-funded education or employment training. Wherever required to work, they have restricted access to Commonwealth-funded employment and training schemes.

"The impact of restricted services presents significant challenges for organisations working with refugees on TPVs, who are geographically concentrated in NSW," Dr Pickering said.

Based on interviews conducted with 44 providers of settlement services, Dr Pickering, Dr Gard and Ms Richardson found life on a TPV presented obstacles including restrictions in family reunions and the full range of settlement services.

"The various pressures they pointed out included the destruction of plants and animals, restrictions in working with these refugees and the impact of the TPV regime on Australia," Dr Pickering said.

"The TPV regime should be recognised as a purely punitive policy affecting a vulnerable and traumatised population and should be abolished," Dr Pickering said.

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Women scientists' careers don't stall – thanks to baby grant

A senior lecturer in chemistry has become the Monash University staff member to benefit the most from the University's $15,000 Popular and Public Grants. The grant was designed to encourage female scientists to build research projects and maintain their career momentum.

Dr Robinson heads a team that has ARC funding to examine the synthesis of new catalysts for application in chemical reactions. One of the applications of this chemistry is the development of pharmaceuticals for the treatment and imaging of cancer.

"The grant made a huge difference. It means that my research group of five PhD students, one masters student, and one honours student was properly supervised without any drop in momentum. I was in daily contact with the research assistant, who was able to run my research group, write the papers, and keep up with the day-to-day administration of the projects."

Dr Robinson said the grant was one of several faculty initiatives aimed at retaining good female academic talent. This grant, along with other female academics, feels confident about having a family and advancing their careers, Dr Robinson said.

Dr Robinson has two children, aged two and a half years and eight months.

Contact:
Dr Andrea Robinson
and son Kane both benefit from the grant.

Photo: Greg Ford

Exhibition explores Australian tourism

A fascination with shells and rare books led to a Monash palaeontologist and a university librarian to benefit the most from the University's $15,000 Popular and Public Grants. The grants were designed to encourage female scientists to build research projects and maintain their career momentum.

Dr Stilwell's fascination with shells led him to buy a beautiful 1821 edition of the Shell Collector's Guide from the Tippiscuate River and selling them to a button factory. From this, Dr Stilwell developed a keen research interest in fossil shells and how they can be used to unlock the secrets of lost worlds, which has taken him to remote corners of the globe.

While in a tiny Cambridge bookshop in 1995, Dr Stilwell found a beautifully produced 1821 edition of The World's First Shell Collecting Guide from 1821, also known as John Mason's The Voyager's Companion. He purchased it for £25.

Dr Stilwell's fascination with shells has led a Monash University of Australian life in the early days and the world of popular publishing. Others, including the three-volume School of Geosciences, has reproduced a research fellow in the tourism interests of the times with a description of Australian tourism a rare book.

Monash rare books librarian Mr Richard Overell has put the exhibition together from the Library, State library of NSW. Mr Overell said.

"It means that my research group of five PhD students, one masters student and one honours student was properly supervised without any drop in momentum. I was in daily contact with the research assistant, who was able to run my research group, write the papers, and keep up with the day-to-day administration of the projects."

Dr Robinson said the grant was one of several faculty initiatives aimed at retaining good female academic talent. This grant, along with other female academics, feels confident about having a family and advancing their careers, Dr Robinson said.

Dr Robinson has two children, aged two and a half years and eight months.

Contact:
Dr Andrea Robinson
and son Kane both benefit from the grant.

Photo: Greg Ford

Currency Companion to Music and Dance in Australia

Edited by John Whitbrook and Aline Scott-Maxwell

Published by Currency House Inc

This 735-page reference book is the first truly comprehensive guide to the history of music and dance in Australia. It contains 370 profiles from more than 270 contributors and a 14,000-word index covering entries from a cappella to the silent screen and everything in between.

The editors, both respected musicologists with a special interest in the complex history of music and dance in Australia, also contributed several entries.

The book is unique in its recognition of cultural diversity and community from 1788 to the present. In keeping with the editors' policy of inclusiveness, the compendium includes not only mainstream works, but also a comprehensive section on Aboriginal traditions, references to immigrants' traditions, the origins of fiddle songs, and the adaptation of traditional Caribbean music to suit a climate devoid of snow and reindeer.

Dr John Whitbrook and Dr Aline Scott-Maxwell are honorary research associates in the School of Music – Conservatorium at Monash University. Dr Scott-Maxwell is also senior Asian studies librarian at the Monash University Library.

Einstein's Heroes

By Robin Arianrhod

Published by University of Queensland Press

Einstein's Heroes, a combination of science, history and biography, takes the reader on a journey of discovery about the phenomenon of mathematics – humanity's universal language and one of its most amazing accomplishments.

The book revolves around the lives and work of the brilliant scientists who inspired Einstein, particularly James Clerk Maxwell, Michael Faraday and Isaac Newton.

The authors describe mathematics as a magical language of prophecy that allows us to describe things we cannot yet see or even imagine.

Dr Robin Arianrhod teaches mathematics in the Science faculty's School of Mathematical Sciences at Monash University.

Postrscript

Two leaders in obstetrics and gynaecology have co-authored a new textbook for students and health professionals.

Obstetrics, Gynaecology and Women's Health, published by Cambridge University Press (RBP: 209.95), is written by Dr Vincent O'Connor and Professor Gabor Kovacs. Professor Kovacs is professor of obstetrics and gynaecology at Monash University and medical director of Monash IVF. He is also one of the world's leading IVF clinicians and researchers.

Dr O'Connor is a senior lecturer in obstetrics and gynaecology at the University of Queensland.

The book is essential reading for students of obstetrics, gynaecology and women's health. It covers clinical topics and surgical procedures and provides detailed commentary on the contemporary sexual, psychological and economic aspects that affect women's lives.

If you are a member of the Monash community and have a forthcoming book, contact media@adm.monash.edu.au.

Books featured in 'inprint' are available or can be ordered at Monash's four on-campus bookshops.

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Melbourne to Mount Gambier is being studied

Predicting our volcanic future

Geosciences

The volcanic province stretching from Melbourne to Mount Gambier is being studied by Monash University scientists who hope to predict the severity of future volcanic eruptions in the area.

The province has been erupting for the past 4.5 million years, said Professor Ray Cas from the School of Geosciences. "The last eruption was at Mount Gambier about 4500 years ago, and given the 4.5 million year life span of the province, there’s every likelihood there’ll be eruptions in the future," he said.

Professor Cas and masters researcher Mr Andrew Cheesman are focusing their attention on the Red Rock Volcanic Centre near Colac in western Victoria because the site is home to clusters of scoria cones and large open craters, called maar craters.

"The style of volcanic activity that produces the craters is quite different to that which produces the cones," Professor Cas said.

Mr Cheesman is investigating why the eruption styles of the Red Rock volcanoes have varied between having a maar-style of erupting and having a cone-style of erupting. "We can determine why the eruption styles of the volcanoes have differed in the past, we might be able to predict the type of eruption that will occur in future and its accompanying hazards," he said.

 Maar craters are produced by the intersection between magma rising through the earth’s crust and water in subsurface aquifers.

"The water undergoes an instantaneous conversion to steam when it comes into contact with the rising magma," Professor Cas said. "The explosion that accompanies this change causes a large increase in pressure and the overlying rocks are explosively ejected, producing a maar crater."

The volcanic eruptions that produce scoria cones are driven entirely by volatiles dissolved in the rising magma. There are two main ideas of how the cones formed. One is that during an extended platé of magma, the conduit eventually filled with whatever volatile contents the rising magma might have. The other is that the fracturing through which the magma rises to the surface are lined with magma, which solidifies and stops the groundwater from coming into contact with the rising magma.

Mr Cheesman has been studying the rock layers around Red Rock for clues on how the cones formed.

Climate

The North American continent has been warmed by the burning of fossil fuels over the past 50 years, according to a collaborative study by a Monash University researcher and colleagues in the US and UK.

Previous studies of the causes of climate change have been mostly concerned on global-scale patterns of climate change, because the causes of warming caused by human activities is harder to detect over smaller areas.

Dr Marlo Braganza, a postdoctoral research fellow in Monash University’s School of Meteorology and Oceanography, and climate scientists from the US and UK have developed a statistical technique that compares the impact of human activities on regional climate changes to the climate change due to natural variability.

They used the technique to examine whether the temperatures that have been recorded in the US and Canada over the past 100 years were human-induced or due to natural climatic variation. The research was published last month in the international journal Science.

"Most of the observed global-scale warming over the past 50 years is believed to have been due to an increase in atmospheric greenhouse gas concentrations," Dr Braganza said. "We, along with other climate research groups, responded to a call from the Intergovernmental Panel on Climate Change to investigate the causes of regional climate changes."

North America was studied because good-quality data on average surface temperature changes have been available from the years 1881 to 1999. "Over the past 100 years, it has been observed that in North America there has not been only a change in average temperatures but also changes in the temperature contrast between land and ocean, faster warming at higher latitudes and faster warming of nighttime minimum temperatures over daytime maximum temperatures," Dr Braganza said. "For each of these factors we compared the observed temperature changes to the temperature predicted by different climate models. The results confirmed the link between human greenhouse gas emissions and natural climate variation in contrast to the temperature changes predicted by different climate models. The results confirmed the link between human greenhouse gas emissions and natural climate variation in contrast to the temperature changes predicted by different climate models."

Even factoring in temperature changes caused by solar radiation and volcanic activity, Dr Braganza’s statistical analysis indicated that the North American climate change from 1881 to 1999 was most likely due to human activities that have increased greenhouse gases through the burning of fossil fuels. "It’s crucial that we look at the earth’s climate in this 200 year half of the century of observations that the observed warming in North America was most likely the result of a combination of human-induced and natural variations in climate," Dr Braganza said.

A statistical analysis has begun on whether human activities have affected Australian climate over the past 50 years. The research was published last month in the international journal Science.

Monitoring the home fires that warmed America

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Free

Free

Your Home Office Solution

In your desk "not ergonomic" & not computer friendly? Do you have a mismatched arrangement of furniture that is inefficient? Do you need some help bringing order, comfort and style into your Home Office? We custom design furniture around your specific needs, making sure it fits properly and matches the decor of your home.

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You gain the benefit of 20 years experience

FREE

Drawings of your design ~ See a preview of your finished product

Free

On-site check measure ~ Won’t be sure it fits?

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