A slippery science
The chemistry and physics of fun for young scientists

Family secrets
Investigating the secrets of success on the family farm

Welcome back
Missing for 17 years, the Armoured Mist Frog is alive and well
Ranking systems may cause controversy because of their methodology but they do offer us some insight into how universities are faring in relation to their peers. They are, of course, particularly welcome if your university does well.

One of the leading ranking systems is the Shanghai Jiao Tong Academic Ranking of World Universities, which has been published every year since 2003. This year our University was one of 15 Australian universities to make the top 500, and we were ranked in the 303–401 grouping – a substantial lift on our position in 2007.

We also improved our standing in the related Top 100 for the Asia-Pacific region and among Australian universities that made the list.

Another indicator of our standing in the world comes from the Essential Science Indicators database of the scientific business of Thomson Reuters. It lists the world’s Top 50 most frequently cited research institutions over a period of five years, from January 2003 to December last year, across a number of categories.

Published in September, the ESI has James Cook University ranked in the Top 50 in the Environment/Ecology category. We are one of only six Australian universities to make the Top 50 in any particular category.

And to put a human face on our achievements, in the 2008 Smart Women – Smart State Awards, four were won by JCU – Dr Kirsten Helmann [Women in Industry/Business], Romina Rader [Postgraduate Students, Science], Kateryna Bazaka [Postgraduate Students, Engineering], and Amanda O’Malley [the inaugural Green Award].

Tara Dalla Pozza, a recent honours graduate in anthropology, received the award for Community Innovation: women empowering Indigenous communities. Two of our students – Amy Mauric and Karen Benn – were also highly commended.

The awards recognise women who are excelling in science, engineering and technology across Queensland and to pick up four of the 15 awarded is a terrific effort by JCU’s women.

While all of these accolades add to JCU’s reputation it needs to be stressed that it is our people who are JCU. It is not some amorphous entity. My thanks go to all those within the JCU community who through their efforts have made us such an important player in the tertiary teaching and research fields in Australia – and the world.

Sandra Harding Vice-Chancellor
The critically endangered Armoured Mist Frog, *Litoria lorica*, is alive and well, and living in a remote location on far north Queensland’s Carbine Tableland, well outside the areas it used to inhabit.

“We were looking for new research sites when we came across these guys, and we knew we had something pretty cool,” Robert said. “They fitted the description for *Litoria lorica*, and our identification has since been confirmed by Dr Conrad Hoskin at the ANU.”

The frog had been feared lost in the devastating outbreaks of amphibian chytrid fungus that began affecting the frogs of the Wet Tropics 20 years ago.

Working with Professor Ross Alford and the JCU Amphibian Disease Ecology Group, Robert hopes the Armoured Mist Frog can help other frog species overcome the threat of the fungus.

“This population is healthy,” Professor Alford said. “It’s living alongside a healthy population of the Waterfall Frog, *Litoria nannotis*, another species that has declined due to the fungus.”

Although all the frogs of both species at the site are in good health, most individuals are infected with the amphibian chytrid fungus.

Professor Alford’s group plans to investigate how these populations are able to coexist with the disease.

“If we crack that puzzle, we will have a much better chance of conserving and managing frogs that are vulnerable to this devastating pathogen.”

The research is supported by funding from the Federal Department of Environment, Heritage, Water and the Arts, Australian Geographic, and the Skyrail Foundation, as well as collaboration with the Queensland Parks and Wildlife Service.

Countless hours of hiking and night-time frog hunting paid off for JCU doctoral student Robert Puschendorf, when he and two volunteers found a frog species not seen for the past 17 years.

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Winning women

Congratulations to JCU’s smart women who won recognition at this year’s Smart Women Smart State Awards.

Community Innovation

Anthropology honours graduate Tara Dalla Pozza and the Community Development Team from Lockhart River have developed activities to help relieve boredom, empower the community, provide leadership, and offer entertainment and cultural activities.

Postgraduate Students, Science

Romina Rader’s investigation of pollinating insects in natural and agricultural systems will ultimately help make farming more sustainable by improving existing pollination services provided by native insects.

Postgraduate Students, Engineering

Kateryna Bazaka won the award for her work on an environmentally friendly, low-cost technique for producing polymer materials from a non-synthetic source.

Women in Industry/Business, Research Science

Dr Kirsten Heimann has undertaken ground-breaking research into the biotechnological and environmental applications of micro algae.

Green Award

Amanda O’Malley won this new award for the entry that best considered environmental issues. Amanda has conducted the first investigation into a newly described freshwater turtle. [See page 13 for more details on Amanda’s research.]

Two JCU students were highly commended: Amy Mauric for her work on phosphate stabilisation of sulfidic waste rock at Zinifex Century Mine; and Karen Benn for her research on nutrient management by cane farmers.

Tara Dalla Pozza (left) and Lockhart River’s Rebecca Elu at the Smart Women Awards.

www.jcu.edu.au/discover 3
Dr Hilary Whitehouse and a bear friend discuss gravity. Photographer Sue Wellwood.
What has at least 1800 feet, squeals with joy and exudes green slime?

It’s Science on the Oval, an annual event where JCU’s pre-service teachers help primary school students explore science at its liveliest and loudest.

“Being on the oval is important, because we want the students to experience science as something that’s messy, interactive and energetic,” says instigator Dr Hilary Whitehouse, a senior lecturer in Education at JCU in Cairns. “We want to counteract, in every way we can find, the stereotype of science as nerdy and dull.”

Counteracting those stereotypes involves a lot of strange headwear, and hands-on activities such as Sink or Float (demonstrating Newton’s Third Law of Motion), rainbow science (exploring the properties of light) and lava lamps (density and immiscible liquids).

“A lot of Newtonian physics is best demonstrated outdoors,” Dr Whitehouse says. “And when you’re teaching primary school chemistry on a large scale, it’s handy to have plenty of room, and a hose on standby.”

6,500 primary school students and 800 student teachers have taken part in Science on the Oval over the last six years, in partnership with Education Queensland and “the magnificent and untiring support of Principal Anthony Constance and Mrs Annette Ryan at Whitfield State School”.

“The key to the program’s success and its importance is that everyone is learning. The kids are learning at an amazing rate, but so are our pre-service teachers. Our research shows a significant increase in their understanding, competence and confidence after these events.”

The JCU students design the day’s activities, planning what the kids will learn and how to make it as much fun as possible. Safety procedures and risk management are also an important part of the planning process.

“There’s a lot of creativity and performance involved in teaching this way, and every year I see more and more creative and sophisticated ideas being put into practice,” Dr Whitehouse says. “We like to think of it as the pedagogy of fun.”

Although activities change each year, some classics are compulsory due to popular demand.

“We have to have slime, and not just any slime. It has to be slime on a grand scale. It has also been made clear to us that there must be rockets, and bubble-ology.”

After majoring in zoology, and completing a thesis on rainforest rats, before continuing on to postgraduate degrees in environmental studies, Dr Whitehouse has found her niche, and it’s in the Slime Shed.

“Kids of all ages love slime and it can be used to teach many scientific concepts, but with the really little kids, who are just the most terrific learners, slime is a precious thing of wonder. They’ll hold it in their hands and observe it carefully. They’ll want to take it home and discuss it with their parents.”

And when are students ready to learn about physics and chemistry? “They are always ready,” says Dr Whitehouse firmly.

“With the little ones we tend to teach one concept at a time, whereas for the older classes we can be working on several ideas in one activity. But kids will sort out for themselves the level at which they will engage with the material.

“Take particle theory. Really young children aren’t going to grasp concepts of particle interactions, but they’re excited by the idea of the world being made up of tiny particles. They’ll think about it, and come back with questions about how particles behave, and then you know you can take it further.”

— Linden Woodward

Science on the Oval Handbook is published by JCU’s School of Education. For information e-mail hilary.whitehouse@jcu.edu.au
Getting venom from a stone

How many scientists does it take to milk a fish? When it comes to the deadly stonefish, the answer is two, at least until you get the hang of it.

Monash University researcher Dr Sheena McGowan and postgraduate student Kelly Winter came to Cairns to learn how to milk venom from the stonefish.

They have headed home with precious cargo: 5 millilitres of venom.

James Cook University’s Dr Jamie Seymour provided the milking lessons and the stonefish.

“Attached to each spine there are two sacs of venom, and it’s possible to empty the sacs with a small syringe.” Dr Seymour explained.

“Stonefish can handle being out of the water for many hours, so it really doesn’t bother them too much.”

Stonefish venom causes severe pain along with possible shock, paralysis, and nerve damage. If untreated, a sting can be fatal.

“Stonefish is two, at least until you get the hang of it.”

“It does a lot of damage and it does it fast, which is why it’s so interesting,” said Dr Sheena McGowan.

The researchers plan to isolate the active component of the venom, to determine how it works.

“It could also lead us to other proteins that work the same way, which might have medical applications.” Dr McGowan said.

Dr Seymour said that, like jellyfish, stonefish could eventually provide useful pharmacological tools. “We know it’s powerful stuff. The next step is to find a good use for it.”

Many thousands of people visited JCU’s Townsville and Cairns campuses for this year’s Open Days, exploring the University and meeting staff and students.

Visitors to the Townsville campus followed a forensic trail, where staff from archaeology, criminology, psychology and journalism played out a murder case, beginning with the discovery of bones and culminating in a revealing chat show.

The new Creative Arts building welcomed its first visitors with hands-on activities and displays of students’ works.

In the School of Law’s Moot Court, a certain Ms Goldilocks pleaded guilty to charges of burglary, stealing and wilful damage. The mooting participants prosecuted, defended and judged the proceedings.

The butterfly house was a popular spot in Cairns. Across campus, local teams competed in the Opti-MINDS challenge and the law debate.

“It’s always a pleasure to show off the campus to our local community,” said Deputy Vice-Chancellor, Professor Scott Bowman in Cairns.

“Every year there are new developments, and this year one of the big attractions was the Australian Tropical Herbarium, which holds more than 160,000 tropical plant specimens, including some collected by Joseph Banks in 1770.”

James Cook University has opened its new multi-million dollar Singapore campus.

JCU Singapore (JCUS) moved to the new campus to accommodate rapid growth in student numbers and academic programs.

Enrolments at the JCU Singapore Campus have increased from 50 to 1600 since the University commenced operations in Singapore in 2003.

The opening of the new campus came a month after JCU became the first Australian university to be awarded Singapore Quality Class for Private Education Organisations (SQC-PEO).

JCU Vice Chancellor and President Professor Sandra Harding said the University’s Singapore Campus was a crucial element in JCU’s strategy to serve the peoples of the tropics.

“Our investment in creating a new and bigger campus is proof of our solid commitment to the University’s future in Singapore, and our aim to add to the nation’s talent pool,” she said. “It is a strengthening of our relations with an important ASEAN nation.

“We look forward to welcoming Singaporean students to our new campus as well as those from other countries including JCU’s Australian students.”

JCU Chancellor Lt General John Grey was the official host for the event, which was attended by key University staff from Australia and Singapore, international education representatives, students and the local community.

The Australian Prime Minister Kevin Rudd was personally represented by his Parliamentary Secretary, Anthony Byrne MHR.

The campus at 600 Upper Thomson Road has been refurbished at a cost of almost $5 million to cater for up to 3000 students.

Dr Jamie Seymour shows Kelly Winter how it’s done. Photographer: Sue Wellwood

Carlos Calderon (at rear), Chris Coleman and Diego Calderon with Pencil, an Australian Stock horse who helps teach veterinary science. Photographer: Jo Meehan.

JCU’s new Singapore campus

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Susan Thomson had the honour of staging the first exhibition in the gallery of the new School of Creative Arts (SoCA) building at JCU in Townsville.

Susan, who is in her honours year, took as her theme Occident & Orient: a Dichotomy of Styles for the week-long exhibition in September.

Using a variety of media, she provided a comparative study of the form, function and decoration of domestic tableware from the Victorian era (1837-1901) and the late Chosen period in Korea.

Her exhibition, which ranged from examples of the tableware of more than 100 years ago to Susan’s own creations, took full advantage of the high-tech capacity of the gallery.

It was an apt exhibition to launch the gallery with its comparison of cultures, their similarities and differences, and its journey across the years from the simple art of creating pottery to digital presentation of images.

Similarly, the new SoCA building stands as both a cultural comparison to the other buildings of the Townsville campus and as the symbol of the evolution of the teaching of creative arts at JCU.

The colourful, modern $10M complex has been built next to some of the older, grey edifices of the campus.

It houses state-of-the-art facilities for digital media design, digital imaging, digital sound, performance and the visual arts.

Formally opened in October by the new Governor of Queensland, Her Excellency Ms Penelope Wensley, it is the culmination of the journey from the College of Music, Visual Arts and Theatre, which taught the traditional arts, to the new digital age of creative arts being offered by SoCA at the heart of the campus.

Students now have the latest digital technologies to both support and enhance their creative intentions and interests.

— Jim O’Brien
As the last spectacular plume of pyrotechnic magic burst over the strangely clear Beijing sky on Sunday 24 August, 2008 and the sacred Olympic flame died, the athletes began to celebrate the end of the ‘most exceptional Olympics’. The journalists, who sent their final copy around the world in the main, generally somewhat patronizingly, agreed that the Beijing Olympic Games was a success. But what, in this particular context, does success mean?

Most brickbats and bouquets are bestowed on the hosting city but usually the host city’s major preoccupation is the economic impact of their Games. Yet, cost never appeared to be an issue in the lead-up to the Beijing Olympics, for behind them stood the Chinese Communist Party and 1.3 billion Chinese whose industry now drives the global economy.

All Olympic Games have immense political, economic and cultural implications. For China the Beijing Olympics also marked their debut on the world stage as a first nation and the next global superpower: the Games had to be a success. Nor did they fail, at least not in the sporting arena, where their 51 gold medals made them one of the most powerful sporting nations in the world.

Importantly, the Games were not blighted by terrorist attacks, there were no transport hassles, and the value of China’s authoritarian governance was evident when the shut-down of industry and the restrictions placed on private vehicle use eventually produced many clear blue skies and amazingly, an Olympic record in the men’s marathon!

As the global master of ‘soft power’ the Beijing Olympic Games represented China’s most profound diplomatic effort to date to sell ‘brand China’ to the world. It was the first time that the emerging superpower had exposed itself so openly to the global media and clearly, they were nervous, often overreacting to tense situations such as occurred during the flame relay. Issues over ticketing, public access to the Olympic sites, and the lack of big screens in public venues were leapt upon by the media to illustrate the extant churlish ambience.

For China, the Beijing Olympics was part of the plan to reshape China as a harmonious socialist society and in further establishing their legitimacy as a global power. If this effort succeeds, then Australia will have played a major role in this critical stage of China’s shift into a more harmonised world, and if our efforts have any positive impact upon assuaging the undoubted geopolitical tensions that still lie ahead, then yes, the Beijing Games will have been a success.
Connar’s PhD project is to investigate the impact of farm stressors, and the coping mechanisms families use to overcome the challenges facing farmers.

Farming stressors include economic factors, drought, global warming and changes in technology. Families taking part in the study will be interviewed, and from those interviews a questionnaire will be developed for wider distribution.

“We will be looking at farmers’ personalities, attitudes and opinions, as well as successful strategies families have for working together and supporting each other,” Connar said.

“Coping strategies may be difficult to identify, as well as the true level of distress, because farmers can be reluctant to admit they have any major problems,” she said.

Connar said there could be a level of stigma attached to mental health problems, and people often under-represent the severity of their problems. “This can lead to under-diagnosis and a lack of support for mental illnesses such as depression and anxiety.”

Families already recruited to the study hail from properties from Mackay to Innisfail and out west to Hughenden. For each family, Connar will interview all family members over the age of 18 who are still living at home.

“We are looking at how the family business, in combination with stressors, impacts mental health – what is the most appropriate system to achieve the best level of balance between work and home lives,” Connar said.

The work-home relationship is unique to farming families, where the home and the workplace are one and the same, and employees are often family members.

“This makes it practically impossible to leave work at work or to separate the roles of work and home,” Connar said.

At the conclusion of the investigation Connar plans to compile a database of coping strategies to assist in a smoother-run farming business. Other outcomes will be the development of a scale that assesses those stressors that are specific to Australian farmers.

A farmer’s daughter with an interest in organisational and health psychology and a focus on rural life, Connar hopes to eventually take her project to another Australian state, or overseas, to test the applicability of the scales that will be developed throughout the study.

For information on the project, or to discuss taking part, please e-mail Connar McShane at connar.mcshane@jcu.edu.au

~Jo Meehan
Gabriel Porolak remembers taking careful aim at the spotted cuscus, high up in the lowland rainforest.

To Gabriel and his playmates, knocking the now-threatened animal from its perch was all part of growing up on Manus Island, an hour's flight north of Papua New Guinea's capital, Port Moresby.

“Everyone in the village was a subsistence farmer. We grew our own vegetables and we went hunting. That was the way it was,” he says.

And that’s the way it could have stayed, had Gabriel’s interest in the natural environment, and people’s reliance on it, not led to a science degree in PNG, and then a research Master’s at James Cook University.

Papua New Guinea’s tree kangaroos (threatened, like the spotted cuscus, by hunting and habitat loss) are now the focus of his working life.

The Tree Kangaroo Conservation Program (TKCP) has been working in PNG since 1996, aiming to protect the tree kangaroo in ways that also meet the needs of the local communities. Its mission is to establish a 150,000-acre conservation area on PNG’s Huon Peninsula through community-based action that includes scientific research, education and conservation outreach.

The program brings together a team of experts from all over the world under the direction of Dr Lisa Dabek, based at Woodland Park Zoo in Seattle, Washington.

Gabriel has investigated the home range and habitat use of Matschie’s tree kangaroo [Dendrolagus matschiei] by radio-collaring and tracking animals on the Huon Peninsula, where they are endemic.

But just getting to the Peninsula and finding the subject of his thesis was an epic task.

First the team of experts, including Gabriel and fellow researchers, field vets, veterinary nurses and expert animal handlers flew in a small Cessna from Lae to Yawan Village.

“Yawan Village is about 1,400 metres above sea level, but the tree kangaroos are found much higher, at 3,100 meters. The only way to get up the mountain is on foot. It’s a long, steep walk and it’s raining almost every day.”

“Half the village helps us carry our equipment and supplies to our campsite at Wasaunon on the Sarawget Range,” says Gabriel, who is a seasoned walker. “It takes the full team two days to reach the site, but I do it with the locals in eight hours.”

The team hired local hunters to locate the tree kangaroos and climb trees in pursuit of them. Once captured, the animals were fitted with radio collars, weighed and measured, and then released.

Gabriel clearly has a passionate commitment to the long-term survival of this endangered species, but he knows the tree kangaroo’s future is bound up with the people who make their living in the rainforest.

“By showing local people why and how the tree kangaroo should be protected, the TKCP is showing them how to protect their own futures, and introducing them to a possible new future. Many of the kids I have trained, now, rather than hunting tree kangaroos, they want to study science too.”

Gabriel has just completed his thesis and is back in PNG working with the TKCP program as a research coordinator. He hopes to eventually undertake doctoral studies.

“Analysis of the tracking data shows that the Matschie’s has the largest recorded home range size of any known tree kangaroo species. It needs 80 hectares to feel at home! There’s plenty more to learn about them and their conservation.

“When I was a boy I had no idea how special these animals were. Tree kangaroos are found only in the rainforests of northeastern Australia, West Papua and Papua New Guinea. Six of the ten species are found in PNG, and so far Matschie’s is the only one I’ve seen in the wild. I’ve still got five more species to find.”

— Helen Cook

www.zoo.org/conservation/treeroo.html
The research team weighs and measures the kangaroos before releasing them.

A tree kangaroo waits to be collared and released. Below: Gabriel Porolak at work on PNG’s Huon Peninsula
Negotiating a course

A new series of intensive, short courses at James Cook University will teach people how to negotiate their way through disputes.

Ranging from one day to five days, the courses will be taught by highly experienced negotiation professionals.

The director of the dispute resolution program at JCU’s School of Law, Sean Johnson, said the series would provide high-quality, pragmatic negotiation skills.

“Working with live situations, participants will learn the craft of negotiation by negotiating,” Mr Johnson said.

“We can talk all the theory in the world but people want real skills and we will develop those skills.”

The intensive courses are built on the same foundations as the negotiation subjects in the Master of Dispute Resolution, with a pragmatic focus and a solid grounding in negotiation strategy selection.

“These courses take the ‘amateur’ into another league by working on good technical skills, strategy selection and control,” Mr Johnson said.

“It is also possible for participants to use these courses as a pathway towards undertaking postgraduate studies.”

There are two three-day courses including negotiations principles, building the foundations of great practice, and advanced negotiation. There is also a one-day course designed for professionals, such as lawyers.

For more information, please contact the School of Law, Tel 07 4781 4264 or go to www.jcu.edu.au/law

Large Animal Lecturer

JCU’s new Senior Lecturer in Large Animal Medicine has travelled widely in South America, working with camelids – such as llamas, alpacas and camels.

“Camelids are strange and crazy creatures with fun personalities,” said Dr Rachel Tan.

“They are challenging to work with because they are very different in their clinical presentations and response to treatment. It is very rewarding to see them get better.”

Dr Tan is also interested in the potential of alternative therapies in the treatment of animals.

“I completed a certificate in veterinary medical acupuncture at Colorado State University and I’m interested in the complementary use of this very ancient medicine with western medicine,” she said.

“I frequently use acupuncture on my dog, Chase, who is 10-years-old and has degenerative joint disease. In conjunction with anti-inflammatory medication, I believe it has been very useful to help her through winter and after injuries.”

Dr Tan thinks that acupuncture also has a place in helping performance animals, such as horses, with chronic low grade pain. “There are restrictions on drug use during competition, so acupuncture can be a good option.”

Dr Tan will be delivering the equine medicine and surgery program in fourth year Veterinary Science program at JCU, as well as contributing to final year clinical rotations in the new vet hospital.

A winning planner

Professor Bob Pressey has been awarded the Inaugural Australian Ecology Research Award from the Australian Ecological Society.

Professor Pressey, who is considered the driving force behind establishing systematic conservation planning as an important research field, was recognised for his recent research paper titled Conservation planning in a changing world.

“Conservation planning is the process of locating, configuring, implementing and maintaining areas that are managed to promote the persistence of biodiversity and other natural values,” Professor Pressey said.

“Since its origin, the field has influenced planning by major organisations such as The Nature Conservancy and shaped policy, legislation and conservation on the ground.”

His current project is being funded by the Australian Research Council and will provide solutions in the context of biodiversity offsets, return-on-investment decisions, and incremental implementation of regional plans.

Chancellor re-elected

The Chancellor of James Cook University, Lt Gen John Grey AC, has been re-elected for a further two years by the University’s Council.

A former Chief of the Australian Army, Lt Gen Grey has been Chancellor of JCU since 1999, and will now continue until March 2011.

Vice-Chancellor Professor Sandra Harding said that Lt Gen Grey’s election was unanimous, which was an indication of the strength of regard the Council had for his leadership in governance.

“The growth and continuing development of the Cairns and Townsville Campuses has been one of the highlights of my time at JCU,” Lt Gen Grey said.

“In Townsville we have launched the exciting re-development plan for the campus – the $1 billion Discovery Rise project. In Cairns we have developed the Australian Tropical Forest Institute and are looking towards the establishment of the Dental School next year.”

Lt Gen Grey has also been the Chair of the Wet Tropics Management Authority since 2003.
Growing up in the Far North, Amanda O’Malley loved to play with the fresh water turtles she found in local creeks. So when the ecology of Innisfail’s Pink Nose turtle was suggested as an honours topic, she agreed readily. After searching waterways between Cairns and Townsville she established that the turtle was unique to Innisfail’s Johnstone River.

Although the Pink Nose has been known to science since 1984, it was only described and named Elseya stirlingi in 2007. Amanda began work on these turtles in 2005 and is now conducting her PhD, investigating their sensitivity to habitat modification and climate change.

She recently received the inaugural Smart State Smart Women Green Award, sponsored by the Environmental Protection Agency.

“Along the Johnstone there are three different turtle species, occupying different habitats, with the Pink Noses dominating in the lower reaches,” she explained. “By comparing the highland and lowland populations, I hope to determine what impact climate change might have on them.”

Amanda’s research takes her to pristine rainforest, as well as those stretches of the Johnstone that run through farmland. “The rainforest sites are harder to reach, because I have to carry about 40 kilos of equipment, but they’re special places. Dawn and dusk are the best times to find the turtles, and the river and the rainforest are beautiful then.”

Once caught, the turtles are marked and measured, and a small sample is taken for isotope analysis before their release.

By looking at their stomach contents, using a turtle stomach pump she designed herself, Amanda has found that a lot of their food comes from windfall leaves.

“The isotope analysis will help determine their long-term diet,” she said. “But certainly the turtles are more abundant in areas where the riparian zone is well vegetated.”

Life as a Pink Nose turtle can be tough, and hatchlings are a popular snack for bandicoots, rats and feral pigs. “At some of the nesting sites I observe I’ve seen a mortality rate as high as 95 to 99% in the first 48 hours after being laid,” Amanda said.

For those who make it, there are weed infestations to deal with, as well as the impacts of agriculture and land clearing. “I hope my research will give us a clearer picture of their place in the ecosystem, and perhaps find some ways to reduce the impact of climate change on wildlife in our waterways,” Amanda said.
When primary school students detonated a 50 kg bath bomb at JCU in Cairns, science teacher Matt Evans took the brunt of the blast at ground zero [in the bath tub].

Mr Evans measured the temperature changes and extreme fizziness caused by a bath bomb two hundred and fifty times the normal size.

Science teacher Matt Evans measures the impact of a giant bath bomb.

This year’s graduation ceremony at JCU Singapore [JCUS] saw Mr Henry Heng Jee Kwang inducted as an Honorary Doctor of the University, in recognition of his exceptional service to the University.

Honouring Henry Heng

For 20 years, Henry Heng has been involved in the conceptualisation and implementation of national strategies to upgrade Singapore’s workforce.

It was while he was CEO at PSB Corporation that he became intimately involved with the establishment of a JCU campus in Singapore, impressing the JCU executive at the time with his energy, his clear and far-sighted strategic vision, and his leadership.

Mr Heng served as a member of the board of JCUS from 2003 until early 2007, telling the 2007 convocation of JCU graduates in Singapore that he held the University very close to his heart and was very proud of what it had achieved in Singapore.

JCU Singapore, he said, was not only producing graduates, it had grown to become one of the leading tertiary institutions in the Singapore government’s plan to make the island the education hub of Asia.

For his contribution to workforce and small and medium enterprises development in Singapore, Henry Heng was awarded the Public Administration Medal [Bronze] in 1995 and the Public Administration Medal [Silver] in 2001. Today, he sits on the boards of several private companies and organizations, and is Deputy Principal/Academic, Nanyang Polytechnic.

Spinning to work

National Ride to Work Day was a chance for new cyclists to get into the saddle, and for regular riders to show how it’s done.

On JCU’s Cairns and Townsville campuses more than 70 staff and students rode to work.

Cyclists were treated to a healthy breakfast by Senior Deputy Vice-Chancellor, Professor Andy Vann, who also pedalled to work.

“It’s great to see that the University recognises the benefits of cycling and supports sustainable transport and a healthy lifestyle for staff,” said organiser Adella Edwards.

Adella said the turnout for this year’s National Ride to Work Day exceeded expectations, and there are plans for an even bigger event next year.
“I believe everyone involved knows that we will have something very special here. I don’t think that I’m alone when I say this will be the best dental school in Australia.”

Professor Andrew Sandham, Head of Program for Dentistry and Professor of Child Dental Health, is talking about the only dentistry school in northern Australia, opening at James Cook University in Cairns early in 2009.

“I know this dental school will attract people’s interest not only nationally but internationally,” said Professor Sandham. And he should know, as he tells us, “I’m registered to practise dentistry in more jurisdictions than anyone I know!”

Professor Sandham’s enthusiasm for the new school goes further than the state-of-the-art laboratories and teaching facilities.

“A new school on a green-field site offers many opportunities, not only to build world-class facilities fitted to the environment and the needs of the communities, but also to educate quality practitioners,” he said.

While working in The Netherlands Professor Sandham was the Project Leader on EUROQUAL, a quality certification program for orthodontists within the European Union.

JCU’s Bachelor of Dental Surgery will be a five-year course covering all aspects of dental practice, but with a special focus on issues of concern to northern Australia, particularly those relating to tropical, rural and Indigenous practice.

The course will encourage remote and rural applicants, and a component of their training will be in a rural environment. Importantly, they will undertake observational placements with local dental practices in their first year.

“We need to know if our students are going to like being dentists, and we need to know that sooner rather than later,” Professor Sandham said. “Too many courses wait several years before students have any contact with the real-life environment they are training for.

“Once we know that our students really want to be dentists then we can concentrate on skill development and competencies. In their fifth year, our students will spend six months in rural and remote practices working under supervision, so when they graduate, they will already have a broad and comprehensive experience of dental practice.”

Born in the UK, Professor Sandham trained at Durham University before taking up his first post as a children’s dentist in Norway. His last appointment before relocating to Cairns was in The Netherlands, but between the two he has worked in the UK and Ireland, Singapore, Denmark, Hong Kong and Perth. His research interests are in craniofacial growth and development, and cleft lip and palate. He is a member of an international collaboration group on dental education.

Professor Sandham is an international examiner for the Royal College of Surgeons of Edinburgh, Scotland and Regional Dental Adviser for Europe. He was recently awarded the Dental Overseas Medal by that College for significant contributions to the Dental Faculty, the College and to dentistry.

— Helen Cook

Building the best dental school

“I know this dental school will attract people’s interest not only nationally but internationally”
Julie’s on track

Julie Smith has enjoyed a well-earned break from her training schedule after winning bronze in the Women’s 200 metre sprint at the Paralympics: an experience she describes as the highlight of her athletics career.

“The whole three weeks was the best time of my life,” Julie said.

Since graduating from JCU last year with a Bachelor of Occupational Therapy, Julie has been busy combining 20 hours a week of training with travel and work.

In the lead up to the Paralympics she travelled to Brisbane regularly where she trained with her coach and the rest of the squad.

Her weekly training sessions include workouts at the gym, track sessions and a recovery session.

Julie is a research assistant at JCU’s Institute of Sport and Exercise Science, working on a falls prevention program.

“JCU has been very flexible allowing me the time to train and compete plus I was able to continue working via internet and e-mail while I was away,” she said.

Julie is hoping to combine her passion for occupational therapy with her love of sport.

“I may get the opportunity to train to classify wheelchair rugby players for their eligibility to compete in the next Paralympics, based on function and disability assessments,” she said.

At the National titles earlier this year Julie won silver in the 200 metres and bronze in the 100 metres. Next year she will compete in an invitational event in Spain along with the top five finishers in the Paralympics.

Inclusive awards

The Inclusive Practice Awards are presented annually to JCU staff who have demonstrated exceptional commitment to assisting students with disabilities.

The recipients are selected from nominations submitted by students with disabilities.

The Awards acknowledge the special efforts made by staff to be flexible, consultative, proactive, and/or innovative in minimising disadvantage for students with special needs.

For details of this year’s winners, go to www.jcu.edu.au/disability/

Closing the gap

JCU’s Club RHINO [Rural Heath in the Northern Outback] hosted a reggae night at Reef HQ to promote the Close the Gap campaign – Australia’s largest campaign to improve Indigenous health.

The campaign calls on governments to commit to closing the life expectancy gap between Indigenous and non-Indigenous Australians within a generation.

150 students and staff attended, and many took the opportunity to sign the Close the Gap pledge.

Associate Professor Gracelyn Smallwood reminded the audience of the shocking state of the health of Indigenous people in Australia, and Dr Louis Peachey told students they should never forget the potential they have to influence the future of the health system.

To sign the pledge, go to www.oxfam.org.au/campaigns/indigenous-health
Amanda is currently travelling and working in the UK on a one-year leave of absence from international engineering company GHD, where she has worked since she graduated with honours in 2004.

"I undertook placement with GHD in the summer of 2002/2003, which helped me secure a graduate position," she said. "JCU gave me the foundations and knowledge to build my career. It allowed me to feel confident. The lectures were relevant to the real world and once I was in the workforce I realised where the basics taught in the classroom apply in real situations."

Amanda is now in Cambridge working with another consultancy firm, Mott MacDonald, a sister firm to Connell Wagner in Australia. "I'm working as a senior environmental professional with the Environmental Impact Assessment team. The work is quite varied and has included preparing a Catchment Flood Management Plan with the hydrologists."}

"This has included assessing the environmental impacts of current and future flooding and identifying areas where flood defences may be appropriate or areas for additional water storage. It's interesting and challenging work."

"Having an engineering degree has enabled me to bring my work with me while I'm still enjoying seeing new things. I am also constantly thinking about ways to use my skills to give back to the community."

"I really enjoy designing infrastructure and facilities where the impact to the environment can be minimised."

"Being an engineer to me means that no two projects are completely identical. I love the challenge of finding a solution to each project no matter how frustrating it may be at the time!"

"I am looking to bring my skills back to Australia soon and will look to take on a more senior role within GHD. I would like to take on more of a management role while still being able to be involved in projects."

An engineering degree has opened a world of job opportunities for JCU graduate Amanda Fell.

"I've always been interested in art. When I was seven I told my mother I was going to be an artist. I studied art through correspondence high school and then attended drawing classes at Mount Isa TAFE, with the Flying Art School, and at Summer and Winter Schools at USQ. I also studied at RMIT by distance education.

When I decided to go to uni I researched several university art programs. The decider was the strength of JCU's core drawing and printmaking subjects and the excellent reputation of its lecturers such as Ron Mc Burnie, Anne Lord, Anneke Silver and Bob Preston. It's a decision I've never regretted.

I became aware of the JCU art collection in 1998, when I undertook the museum and collection management course under May Abernathy at Pimlico TAFE. May used the collection as study material. I became more involved with the Uni collection when Amber Church and I conducted an audit and conservation report on it in 2001.

The collection consists of paintings, prints, sculpture and ceramics. It was started in the 1960s by Professor Ron Kenny who convinced the VC at the time, Ken Back, to invest in art.

It's a microcosm of a certain period in Australian art, and contains some very important Australian artists, including Arthur Boyd, Brett Whitely, Lloyd Rees, Brian Seidel, Thea Proctor, John Coburn, Sam Fullbrook, Ray Crooke, Donald Friend, Lionel Lindsay, Judy Cassab and Grace Cossington-Smith. It also includes important works by past art lecturers and students. This reflects an important part of JCU's involvement in fine arts. It has the potential to become a great collection of works.

My role as curator is to look after the collection, audit it, arrange for exhibition loans, advise on future collection policy and acquisition, and generally take care of the welfare and conservation of the collection.

I feel it is a very important asset for the uni. I'd like to see it develop into a collection that eventually will become important to the wider community both in Australia and internationally."

Jill O'Sullivan spoke to Narelle Reece
Caesars examined

_Hail Caesar_ examines why one in three Australian babies is born by caesarean section.

Caroline de Costa, Professor of Obstetrics and Gynaecology at James Cook University in Cairns, has performed more than 4,000 caesareans and is herself a mother.

The book is intended as a guide to the operation, answering common questions such as: If I have a caesarean for my first baby do all the other births have to be caesareans as well? Is it selfish for a woman to have a caesarean just because she wants one? What are the real risks of caesarean section?

“This is a hotly-debated topic, and women who give birth by caesarean too often end up feeling guilty or negative about their experience because they have not been well prepared,” Professor de Costa said. 📖

Evolutionary crime

_The Curer of Souls_ is Lindsay Simpson’s seventh book and first novel.

Dr Simpson is the Head of Journalism at JCU and has recently introduced the Master of Arts in Writing into JCU’s curriculum.

After four true-crime books, her first novel includes an account of a murder in the Port Arthur penal settlement, based on 1842 inquest papers of the killing of a 17-year old convict boy.

_The Curer of Souls_ is a twisted tale of unrequited love, murder and Darwin’s theory of evolution, set in the late 19th century in colonised Van Diemen’s Land.

The book is a mixture of fact and fiction, and three of the characters are based on the real diaries of three people: Lady Jane Franklin, wife of the governor of Van Diemen’s Land; Thomas Lemprière, a storekeeper, natural historian and artist in the colony; and, Charles O’Hara, the longest serving commandant.

All three were, in real life, keen observers of the natural world.

Lady Franklin had a boudoir of stuffed animals and Lemprière opened a Museum at the penal settlement next to the stores.

“All three were, in real life, keen observers of the natural world.”

“They were, in real life, keen observers of the natural world.”

“Essentially they were proving Darwin’s theory of evolution, before Darwin had even published it,” Dr Simpson said.

Whilst no unrequited love affair between Lady Jane and Thomas actually occurred, by reading the diary of Lady Jane, Dr Simpson was able to create a story line that she felt fitted the character.

“How weather works

At the launch of _Physical Principles of Meteorology and Environmental Physics_ Professor Robert Robson recalled Mark Twain’s complaint that “everybody talks about the weather but nobody does anything about it.”

“Nowadays everybody is talking about climate, without necessarily distinguishing it from the weather, and demanding that something be done about it,” he said.

“The changes that are predicted by global climate modellers are amplified in graphic detail and unashamedly embellished by the media, almost on a daily basis. People are afraid. Politicians react accordingly.

“With this book we provide material for anyone interested in a more considered application of scientific principles to one of today’s great topics.”

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Les Hiddins, known to many as The Bush Tucker Man, launched the public reference collection of the Australian Tropical Herbarium at James Cook University in Cairns in early December.

The public reference collection currently consists of preserved specimens of almost 2000 species of native and naturalised plants of northern Queensland.

Herbarium Director Professor Darren Crayn said the public reference collection would be available to local conservation and land management organisations, students, environmental scientists and professional botanists, as well as interested individuals who wished to identify and learn about plants of interest.

“Given our region’s bewildering diversity of plant life, we expect many organisations and individuals will find this a valuable facility,” Professor Crayn said.

“We also know that living in the tropics among such botanical riches can bring out your inner botanist, so we welcome people who just want to browse the collections to find out more about their local plants.”

Professor Crayn said Herbarium were proud to show the collection to Mr Hiddins, whose work as the Bush Tucker Man had inspired many botanists, both professional and amateur.

“His knowledge of tropical Australian plants and his enthusiasm for sharing that knowledge made him an obvious choice to launch the public reference collection,” Professor Crayn said.

The Australian Tropical Herbarium’s total research collection amounts to more than 160,000 specimens, but Professor Crayn said it was important to protect and quarantine that collection as much as possible.

“Our main research collection is an internationally significant research facility, requiring careful curation and storage under controlled conditions. Some of our specimens are nearly 240 years old and are particularly delicate.

“Our intent in creating the public collection is to offer access to a reference set of specimens to anyone who wants to know more about plants and is willing to put in the time to do their research. This will take some pressure off the priceless research collection.”

The facility includes botanical literature, interactive CDs to help identify plants, a microscope and access to internet-based resources.

“Over time we plan to expand the public reference collection to cover about 4,000 plant species from the region,” Professor Crayn said.

Mr Hiddins, who was awarded an Honorary Doctorate of Science by JCU earlier this year, will join the Vice-Chancellor Professor Sandra Harding to launch the public reference collection. "

www.jcu.edu.au/atfi

JCU’s Chancellor, Lt Gen John Grey AC (retd), explored the collection with Les Hiddins.
A HIGHER DEGREE

Townsville 19.25°S
Cairns 16.87°S

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* The Academic Ranking of World Universities, Shanghai Jiao Tong University, 2008.

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