Seagrass
A dugong delicacy

Prawn breeding
Supercharged shrimp

Orpheus research
The island life
As you can see within these pages, the first six months of 2015 have been very busy for James Cook University.

We have taken an important step forward as a University of three tropical campuses, with our Singapore campus receiving the Singapore Government’s prestigious EduTrust Star rating. JCU Singapore is the first institution to attain this quality mark.

EduTrust Star is the highest level of quality assurance that can be awarded to a private education institution; that is, an institution that is not a Singaporean university. Attaining EduTrust Star has been a priority of JCU Singapore and the University overall since that ultimate quality assurance status was introduced by the Government in 2009. However, it is JCU students who have benefited most from this award, as their lecturers and tutors are obviously producing work of the highest quality.

We are also delighted to have opened our new, multi-use campus in the heart of Townsville. It is a milestone in the growth of JCU and we are pleased to be expanding into the city’s CBD. We’ve wanted to have a physical presence in Townsville’s centre for a long time and we are so excited to have found such a wonderful location.

Interest in the State of the Tropics project has continued to build since the launch of its first report in June 2014. This report goes to the heart of JCU’s agenda and, more importantly, signals a new global dynamic that must be engaged.

The report revealed that the Tropics is not only changing rapidly, but the region’s influence and impact on the rest of the world is set to dramatically rise in coming decades. Indeed, in no small way, the future of the world depends on the Tropics.

I recently visited some major institutions in the United States and found great interest in the State of the Tropics report. These meetings, without exception, affirmed for me the global significance of the Tropics.

There are many exciting things ahead for the University and for the State of the Tropics project, as 2015 continues.

My sincere thanks and appreciation, as always, for all those in the JCU community who make it such a great University and to those in the broader community upon whose interest and support we rely.

Sandra Harding
Vice Chancellor
Staff and students flocked to hear Australia’s Foreign Minister when she gave a presentation on one of the nation’s most successful student mobility programs at JCU recently.

The Hon Julie Bishop, Minister for Foreign Affairs, visited JCU Townsville in April to talk about funding for students under the New Colombo Plan (NCP).

The NCP is a Federal Government initiative that offers undergraduates who are Australian citizens opportunities for prestigious scholarships and grants for study and internships or mentorships in the Indo-Pacific region.

Australian universities develop study programs that are either for academic credit or a mandatory course component, and apply for funding. Universities also nominate students for prestigious scholarships. The funding may involve semester or trimester-based study of up to 12 months, short-term study, practicums, clinical placements, internships, mentorships or short-term research.

JCU staff members met with the Minister prior to her talk, and discussions centred around the positive impacts the NCP has had on JCU’s students, staff and regional partners, and JCU’s plans to apply for the next funding round.

Afterwards, the Minister happily obliged to requests for ‘selfies’ and posed with several staff and students, armed with a gift – a JCU ‘hoodie’.

Photos: Andrew Rankin

Minister Bishop poses for selfies with students

The EduTrust Star is the highest level of quality assurance that can be awarded to a private education institution by the Council for Private Education under the EduTrust Certification Scheme.

Dr Dale Anderson, Deputy Vice Chancellor and Head of Singapore campus, said achieving EduTrust Star status had been a priority of JCU Singapore since the quality assurance scheme was introduced.

“Attaining EduTrust Star had been a long term aim of both JCU Singapore and its parent entity, JCU. The journey toward EduTrust Star has made our organisation a better place. Instilling the high operational standards required of an EduTrust Star institution has certainly benefited JCU Singapore and JCU in Australia has also benefited from observing this process,” he said.

“However, it’s our students who have benefited most from this award. All employees of JCU Singapore are mindful that they have to produce a high level of job performance in order to satisfy our main client group, the fee-paying students.”
The Seagrass Ecology Group relocated from Queensland Fisheries to JCU in 2012, bringing with it world leaders in seagrass research, and more than 30 years of data on the giant aquarium-filter-cum-buffet-diner that surrounds the continent.

Their particular focus is on the seagrasses of tropical northern Australia, but their work takes them as far afield as Victoria and Western Australia and the tropical Indo-Pacific region.

"Australia and Papua New Guinea’s tropical seagrass meadows are a diversity hotspot of global significance," enthuses group leader Dr Rob Coles, who has been researching seagrass since the 1980s.

"Impressive megafauna like dugong and endangered green sea turtles graze on seagrass, and that includes the world’s largest dugong population.

"Our fisheries depend on seagrass meadows as nurseries for important commercial species including tiger prawns, and there’s a long history of Aboriginal and Torres Strait Islander connections with this highly valued sea country."

The importance of seagrass to water quality, filtering out impurities, is well known – but there’s increasing interest in its capacity as a carbon sink, with research underway into its ability to trap and sequester carbon.

Protecting the sea’s superfood

As the national anthem says, Australia is girt by sea. We’re also girt by seagrass, and that’s a good thing – just ask any dugong, seafood enthusiast or the Seagrass Ecology Group.
“Our team, and interest in seagrass generally, began with a strong focus on fisheries,” senior researcher Dr Michael Rasheed says. “But from that industry-driven beginning, we’ve built a team with a broad-based ecological interest in seagrass meadows and the life they support.

Seagrasses prefer sheltered waters, with good light – and that’s what brings them into the sometimes-troubled waters of Queensland’s coastline. Coastal seagrasses tend to clump around the sheltered coasts, bays and estuaries that also attract ports, residential development, and both commercial and recreational fishing.

It’s true that seagrass contributes to good water quality, but it also needs good clear water to thrive,” Dr Coles explains. “Coastal run-off has a significant impact there, and cyclones can be particularly damaging, because they bring an increase in coastal run-off.”

The group has been monitoring seagrass in Queensland, including Gladstone, Townsville and Cairns Harbours for more than 20 years. The picture since 2007 is a grim one, but it’s not all bad news.

“Yasi, Anthony, Hamish, Larry… cyclones are hard on seagrass habitat, and in four years of heavy rainfall all of the ports we monitor on the northern Queensland coast have taken a beating,” Dr Rasheed said.

The coastline north of Cairns, as well as Shoalwater Bay (between Gladstone and Mackay) and the Whitsunday region are areas that warrant that level of protection.”

The Seagrass Ecology Group is part of TropWATER, JCU’s centre for tropical water and aquatic ecosystem research. 
- Linden Woodward
Interest in the State of the Tropics project has continued to build since the launch of its first report in late June 2014.

The landmark report revealed the Tropics is not only changing rapidly, but the region’s influence and impact on the rest of the world is set to dramatically rise in coming decades.

The global significance of the Tropics was recently highlighted by a visit to the United States by the project’s convener and JCU Vice Chancellor, Professor Sandra Harding.

Professor Harding delivered presentations at the United Nations, to US and overseas diplomats at the Australian Embassy in Washington DC, the Nicholas School of the Environment at Duke University in North Carolina, the Australian-American Chamber of Commerce in Houston, Texas and the Baylor College of Medicine, also in Houston. She also hosted alumni events in several cities.

The State of the Tropics is an initiative of 12 research institutions from across the world, including JCU. It produces the State of the Tropics report every five years to answer the simple question: is life in the Tropics getting better?

And there are exciting things ahead. In 2016 the State of the Tropics will release a report that will focus on developing sustainable infrastructure for the region.
The humble backyard BBQ just became more exciting for seafood lovers.

JCU researchers and industry partners are working on growing better and bigger prawns, more quickly.

A new research hub was recently launched in North Queensland to help achieve this.

The Australian Research Council Industrial Transformation Research Hub for Advanced Prawn Breeding received $4.9 million from the Federal Government to undertake research to boost the productivity of the Australian prawn industry.

JCU’s Head of Aquaculture and Fisheries and Director of the new hub, Professor Dean Jerry, said the project will focus on developing the world's most advanced breeding program for the farmed black tiger prawn.

“The end result being prawns that grow faster, are more disease-tolerant and that will retain outstanding eating qualities. Ultimately the program will mean increased productivity and international competitiveness for the Australian industry,” he said.

At the moment the tiger prawn is farmed but the full productivity potential locked in the species’ genes hasn’t been exploited. The aim of the hub is to achieve the same high efficiency in farming the tiger prawn as has been achieved for livestock such as pigs and chickens.

The hub will work in conjunction with research partners, CSIRO, University of Sydney, AGRF and Universiteit Gent, along with industry partner Seafarms, Australia’s largest prawn farming operation, which runs 52 ponds at the site, just south of Cardwell.

One is a ground-breaking ecologist, the other a world expert on dugongs. Both have been awarded the nation’s most prestigious science honour – fellowship of the Australian Academy of Science.

Professors William Laurance and Helene Marsh have been named as Fellows for their outstanding contributions to science and scientific research.

“I nearly did a backflip when the President of the Australian Academy phoned me to say I’d been elected. I don’t think my feet touched the ground for a week afterward,” said an ebullient Professor Laurance.

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It seems like only yesterday to some, but it has been 10 years since the graduation of the first cohort of JCU Bachelor of Medicine/Bachelor of Surgery students.

JCU hosted a reunion weekend in Townsville recently to celebrate the occasion, with graduates and their families travelling from all over the country for the event.

Former students – who now work in a variety of fields, from GPs to specialists – caught up and revisited their med school days, to see what’s changed, and reunited with old friends.

Photos: Cameron Laird

Professor Richard Murray, Dean of Medicine and Dentistry (centre) at the reunion.
The impossibly cute turtles were fitted with GPS trackers so researchers can understand their movements, where they live, and how they navigate the ocean currents.

The project, Habitat use of juvenile flatback turtles in eastern and Western Australia, is being led by JCU’s Associate Professor Mark Hamann and Professor Jeanette Wynken from Florida Atlantic University in the United States.

Associate Professor Hamann said the project involved 26 baby turtles, which were cared for in tanks at JCU’s Townsville campus.

The turtles were fed and nurtured until they were strong enough to hold the trackers so they could be released into the ocean in the Whitsunday region.

They are described as ‘post-hatchlings’, and turtles of this age are not seen in the wild very often. They tend to live in the places of the GBR that people don’t often visit or use, such as the lagoon areas between the coast and the coral reefs.

The information collected about where they go and what they do will help improve ocean management plans.
JCU Alumni all fired up

It has been a great start to the year for JCU Alumni activity in the USA.

In February, alumnus Roger Cooper (BSc 1986), who is now living in Denver, organised a spirited gathering at the Chinook Tavern.

In April, Professor Sandra Harding enjoyed the hospitality of four alumni gatherings during her visit to the USA.

In Boston, JCU’s lively New England Chapter organised a gathering at the Bostonia pub, led by Collin Snow and Brent Fleming.

In New York, the Vice Chancellor’s visit inspired a group of locals to plan to form a New York network.

In Washington and Houston, alumni were invited to the Professor Harding’s guest lectures and some arrived early and had private time to catch up on news from Australia.

USA Alumni all fired up

More and more young people are getting tattoos but more and more have changed their mind and are choosing to have them removed.

Nearly a third of women in their 20s now sport a tattoo and a quarter of all people aged 18 to 30 have at least one tattoo.

However, a third of people are regretting their tattoo and requesting removals, while 14 percent are considering having it removed.

JCU researcher Dr Eduardo de la Fuente says the growth of the ‘ink’ industry continues, but so too does interest in removals.

“Traditionally, a tattoo was about belonging to a community where you expected to live your entire life. But now people have several different personas and belong to several different tribes in their lifetime. As you get older there may be a new persona you wish to convey instead.”

However, Dr de la Fuente said the bigger picture showed most people were happy with their choice to permanently mark their skin.

“If 14 percent of people have looked into tattoo removal, and a third of those inked regret the decision to some extent, a clear majority seem happy with their choice.”

JCU recently succeeded in acquiring a new property from the Singapore Government to accommodate the expansion of its operations.

The new JCU Singapore campus, located at 149 Sims Drive in the eastern part of the island, is a short distance from the CBD. It is also near the newly completed Singapore Sports Hub.

Deputy Vice Chancellor and Head of the Singapore campus, Dr Dale Anderson said the new campus has a gross floor area almost three times greater than the previous main campus at 600 Upper Thomson Road.

“This new campus, which was the site of a major public high school, will provide us with the opportunity to amalgamate all our operations within a single site, and it will definitely contribute to enhancing a more positive student experience,” he said.

JCU Vice Chancellor, Professor Sandra Harding said the new and bigger campus would further enhance JCU’s role as a leading provider of tertiary education in the region.

“We have been growing our presence in the Singapore education sector over the past decade and making positive contributions to developing the human capital of not only Singapore, but also other countries in Asia,” Professor Harding said.

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No longer stuck behind a computer screen, digital technology is paving the way for global connectivity between physical systems. Global connectivity is designed to give us more efficient manufacturing, more sustainable agriculture, smarter businesses, more energy efficient buildings, and more comfortable homes. All of these applications and many others are made possible by connecting sensors and control systems to the world. Described as ‘the next technology revolution’, it is called the Internet of Things (IoT).

In 2016, JCU is launching Australia’s first Bachelor of Engineering program in ‘Electronic Systems & IoT’ in Cairns. This world-leading program will combine traditional engineering fundamentals with a high-tech outlook and JCU will collaborate with technology companies to build a curriculum and teaching facilities for the future. Graduates will be experts in applying technology to solve practical problems. They will work in the existing high-tech industries, but they will also create their own ventures. The program will include a strong focus on entrepreneurship and commercial skills.

They each competed to monitor the different habitats. The objective of the ‘sprint day’ was rapid collaboration to design, build and implement a complete engineering product. Competitors constructed and deployed sensors in all four habitats, with the results graphically displayed on a website accessible to the public. Teams wrote the software, and designed, constructed and installed the system in the field. The sprint day was an excellent introduction to the practical skills, low-cost hardware, adaptive problem solving and fast-paced development that characterises the IoT movement.

Budding JCU scientists have competed in a race with a difference, spotlighting the emerging ‘Internet of Things’ technology.

The recent Sprint Sensor challenge, a joint JCU-Townsville City Council collaboration, saw four teams each assigned a different habitat — wetlands, woodland, a suburban grassed backyard, and a coastal dune.

They were challenged to deliver a tangible outcome in just one busy day. Anyone who participated found it a great learning experience and really fulfilling.

Approximately 30 students from JCU competed, including 10 visiting students from Rowan University in the United States.

http://www.jcu.edu.au/cste/

Connecting globally

Gecko clean secrets

Imagine never needing to wash. JCU researchers have unlocked the secrets of geckos, which manage to stay clean, even in dusty deserts.

In a world-first discovery, JCU’s Professor Lin Schwarzkopf said the researchers found that tiny droplets of water on geckos, for instance from condensing dew, come into contact with hundreds of thousands of extremely small hair-like spines that cover the animals’ bodies.

“If you have seen how drops of water roll off a car after it is waxed, or off a couch that’s had protective spray used on it, you’ve seen the process happening,” she said.

“The wax and spray make the surface very bumpy at micro and nano levels, and the water droplets remain as little balls, which roll easily and come off with gravity or even a slight wind.”

The geckos’ hair-like spines trap pockets of air and work on the same principle, but have an even more dramatic effect. Through a scanning electron microscope, tiny water droplets can be seen rolling into each other and jumping like popcorn off the skin of the animal as they merge and release energy.

Professor Schwarzkopf said the process may help geckos keep clean, as the water can carry small particles of dust and dirt away from their body.

“They tend to live in dry environments where they can’t depend on it raining, and this process keeps them clean,” she said.

The process, described in Interface, the prestigious journal of the Royal Society, may also turn out to have important human applications.

There are possible applications for use in marine-based electronics that have to shed water quickly and for possible “superhydrophobic” clothing that would not get wet or dirty and would never need washing.

Photos: Kylie Davis

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Director of the eResearch Centre at JCU, Professor Ian Atkinson, said the day was a great opportunity for students from local schools and universities to work together.

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Photos: Kylie Davis
Plastics on menu

It may not sound tasty, but corals on the Great Barrier Reef regularly eat microplastic pollution.

Genes help unravel frog mystery

It’s a deadly disease that’s devastated frog populations around the world.

But JCU researchers are one step closer to understanding the pathogen and helping to save more frogs.

A five-year study by JCU researchers is helping unlock the secret to the frogs’ immunity to the deadly chytrid fungus.

First observed in the early 1990s in Queensland rainforest, the fungus (Batrachochytrium dendrobatidis) has spread since the 1970s, causing frog declines and extinctions worldwide.

While the fungus has run riot among frogs, some fortunate individuals seem to be able to live with the disease.

JCU’s Dr Lee Skerratt says the researchers have found out how some frogs resist the fungus through their genetic makeup.

“Corals are non-selective feeders and our results show that they can consume microplastics when the plastics are present in seawater,” says Dr Mia Hoogenboom, from the ARC Centre of Excellence for Coral Reef Studies.

“We aimed to determine whether corals from inshore coral reefs consume microplastics, and whether there is potential for plastic pollution to affect coral reefs.”

As part of the study, the researchers put corals collected from the Great Barrier Reef into plastic contaminated water.

After two nights they found that the corals had eaten plastic particles.

“Corals get energy from photosynthesis by symbiotic algae living within their tissues, but they also feed on a variety of other food including zooplankton, sediment and other microscopic organisms that live in seawater,” says study lead author Nora Hall, a JCU Masters graduate.

“We found that the corals ate plastic at rates only slightly lower than their normal rate of feeding on marine plankton,” she says.

The plastic was found deep inside the coral polyp wrapped in digestive tissue, raising concerns that it might impede the corals ability to digest its normal food.

“During this testing we found microplastics, including polystyrene and polyethylene, although only in small amounts,” says study co-author, Kathryn Berry, a PhD student at JCU and the Australian Institute of Marine Science.

The researchers say the next step is to determine the impact plastic has on coral physiology and health, as well as its impact on other marine organisms.
Studying brains

High school students from Cairns and Mareeba now know more about their brains, after a special session held recently at JCU.

“We all have one, but for most of us the inner workings of the human brain remain a mystery,” JCU researcher and dentistry lecturer Dr Ernie Jennings said.

“We organised the session to give students an insight into how the brain works, how to protect it, and also how it can be damaged by disease, drugs and toxins, or injury.”

Around 80 students attended the session at the JCU campus in Smithfield.

The discussion of brain injuries and diseases fascinated Samantha Mildren, a Year 11 student at St Mary’s Catholic College.

“We learnt that sometimes quite a small event could cause a catastrophic response in the brain and nervous system,” she said.

“I found it particularly interesting to learn how all of the structures worked and were so important,” she said.

JCU researchers and students used a real human brain, as well as anatomical models, to illustrate the brain’s structure and function.

Christopher Richardson, a Year 11 student at St Augustine’s College, was pleased to see a real human brain and to learn more about the brain’s anatomy.

“I have a love of all things science, and this session extended my knowledge of the brain,” he said.

Dr Jennings explained his research, which focuses on the excitability of neurons, with the aim of better understanding the mechanisms of pain.

The students also heard from Professor Alan Nimmo about his work on developing a drug treatment to control cerebral oedema (brain swelling) in patients with head injuries.

“We hope we might have inspired some of the students to consider a career in brain research, and of course we hope they all learnt more about how to protect their brains from injury,” Professor Nimmo said.

NRW is celebrated across Australia each year between 27 May and 3 June.

These dates commemorate two significant milestones in the reconciliation journey – the anniversaries of the successful 1967 referendum and the High Court Mabo decision.

In Townsville, as well as Traditional Owners delivering Welcome to Country and speeches, activities included Torres Strait Islander and Aboriginal dancing.

The community was invited to the campus to share a kupp-murri, reconciliation pledges were made, there was boomerang and spear throwing and a bocce event.

The Annual Mabo Lecture was delivered by the Hon Leeanne Enoch, the Queensland Government’s first female Aboriginal Minister and the Annual Mabo Exhibition displayed artworks from the talented artist, Teho Ropyarn.

In Cairns, students and staff celebrated with talks from Traditional Owners, live music, traditional weaving, paloga games, damper and cultural walking tours.

JCU’s Reconciliation Action Plan sets out JCU’s vision to build strong relationships, increase respect and improve opportunities for Australian Aboriginal and Torres Strait Islander peoples.

The week is a time for all Australians to learn about our shared histories, cultures and achievements and to explore how each of us can join the national reconciliation effort.

Photography: Richard Davis

Photographer: Romy Bullerjahn

www.jcu.edu.au/discover
The X factor

James Cook University has cemented its reputation as a knowledge hub of innovation and activity, with JCU Townsville recently hosting its first TEDx conference.

TED is a global, non-profit organisation devoted to spreading ideas, usually in the form of short, powerful talks.

TEDx is a community-driven event run by individual volunteers who operate under a license from TED (Technology, Entertainment, Design) to bring people together to share a TED-like experience and spark conversations and promote connections.

The theme of the recent TEDxTownsville event was ‘Curiosity’, and featured 11 of the region’s thinkers, innovators, artists and change makers, representing diverse fields such as technology, design, mental health, research and entertainment.

Some of the speakers’ topics included shifting the way people approach workplace health and safety, shedding a light on soldiers suffering post-traumatic stress disorder, making the world a better place through ‘love bombing’, and examining the physiological effects of different toileting practices.

The TEDx event is designed to lead to exciting new ideas, giving the Townsville community an opportunity to share its passion and ideas with the rest of the world.

With dozens of applications to speak, volunteer and attend, it’s clear there’s a hearty appetite in the Townsville community for events like TEDx.

Photos by Greta Elizabeth Photography
Professor Sandra Harding said the campus’ opening was a milestone in the growth of JCU. “JCU is proud to be expanding into the heart of the city. We’ve wanted to be in Townsville’s CBD for a long time and we are so excited that we have found such a wonderful location.”

“One of the biggest threats to fragmented ecosystems is ‘edge effects’—physical and biological changes associated with the abrupt, artificial borders of fragments. For instance, you get more tree mortality, fires, microclimatic stresses and invasive species near edges.”

JCU’s Professor William Laurance says the ecological effects of ‘fragmentation’, or the ecological effect from road building, in major tropical regions is ‘terrifying’.

“The numbers are simply scary, in terms of the pace and extent that ecosystems are being fragmented today,” Professor Laurance says.

“One of the biggest threats to fragmented ecosystems is ‘edge effects’—physical and biological changes associated with the abrupt, artificial borders of fragments.

“Professor Harding said the campus will boost JCU’s engagement with community groups and allow it to work more closely with civic leaders. The campus offers a diverse range of facilities and services for JCU and other community organisations. It includes a Collaborative Learning Area, which features the latest innovative technology to promote flexible learning.

JCU’s Dean of the College of Law, Business and Governance, Professor David Low said a range of subjects would be taught at the campus, including business and law.

“The campus features the first ‘moot court’ in North Queensland with e-court facilities. This will allow us to provide practical training to our law students in the latest methods for evidence management,” said Professor Low.

“The campus will also host short courses for companies seeking professional development for their staff,” he said.

Professor Laurance says even those great forests were under assault.

“For example, loggers have bulldozed more than 50,000 kilometres of new roads into the Congo since the year 2000. As a result, the forests have been invaded by poachers with modern weapons, who have killed off two-thirds of the world’s forest elephants for their valuable ivory tusks.”

“Roads are really the biggest danger. Once a road cuts into a forest, we often see an influx of illegal colonists, loggers, poachers and miners, especially in developing nations where the rule of law is often limited.”

“In the Amazon, 95 percent of all deforestation occurs within five kilometres of a road. If we’re going to preserve parts of wild nature for future generations, we just have to keep the roads out.”

Photo: Richard O. Bierregaard

JCU has achieved a long-held goal, opening its new, multi-use campus in the heart of Townsville.

The 1000sqm Townsville City Campus is an innovative three-storey teaching, engagement and student services centre in the fashionable City Arcade precinct.

A boardroom with teleconferencing and catering facilities is also on site. The ground floor features a ‘shop front’ point of contact for enquiries from potential students, their families and friends. Course brochures and other promotional material are also available. The campus has extremely high speed internet and students can ‘drop in’ to use computers and study in the CBD. Seminars and alumni functions will also be hosted at the campus.

JCU expands its Townsville presence with its City Campus.
In the first half of 2015, researchers at JCU’s Orpheus Island Research Station have been involved in fascinating research projects.

From surveying the ongoing effect of Tropical Cyclone Yasi on reef communities to examining coral and microalgal populations and the effects of ocean acidification, researchers and staff have been kept busy.

They are also currently studying Black Band Disease, which is affecting coral, and the effects of prior exposure to coal dust, and the spawning patterns of finger coral.

As well as field research, the OIRS aquarium houses experiments in closed tanks under different conditions to further assess the role of environmental drivers, such as varying temperature, light, pH and nutrients.

The OIRS is located on the western side of the island, 80km north of Townsville in North Queensland, with access to pristine inshore reefs and islands. A known 1100 species of fish and 340 of the 350 known species of reef coral are found in the underwater gardens of the surrounding reefs.

Volunteers needed!

Throughout the year, the OIRS seeks volunteers to assist with station tasks such as cleaning and weeding general estate maintenance, cleaning duties, painting, feral animal control – such as catching cane toads – census and surveys.

Volunteers can stay at the research station in modern well-appointed facilities free of charge (meals not included) for up to four weeks at a time in exchange for four hours volunteering per day, or 28 hours a week.

Email jcu.orpheus@jcu.edu.au
The virus originates in bats and is transmitted via horses to humans. Infection of horses was relatively rare between 1994, when Hendra was first discovered, and 2005. But since 2006 it has been happening more frequently and over a wider geographic area.

PhD student Gerardo Martin from JCU is part of a team analysing the process and how to disrupt it.

His behavior was not common. I am so glad to have received interest to be involved in his work in marine turtle conservation.

My average day involves having a coffee in my hand at 8am. I don’t check emails until I have written at least two paragraphs of my thesis, which is about 300 words a day.

All this, then I have to produce the next 300 words for my thesis each day at least.

I was 14 when I first heard about such a thing as marine biology. I now have a degree as a Biological (Honours) and a Masters in Aquatic Ecology.

I would like to move to Australia in future. When I was nine, I went down to a marine park, and I saw dolphins, manatees and marine turtles. Then I knew it: I wanted to be involved in this for the rest of my life.

Researchers are now looking at how long Hendra survives after bats excrete it and under what conditions.

There are various risk factors for horses developing Hendra virus.

The deadly Hendra virus is in the crosshairs of JCU research, with scientists hoping to develop strategies to help prevent its transmission.

The virus originates in bats and is transmitted via horses to humans. Infection of horses was relatively rare between 1994, when Hendra was first discovered, and 2005. But since 2006 it has been happening more frequently and over a wider geographic area.

I have to write about five chapters, which are around 10,000 words each. My reward is to then check my emails.

My PhD has involved travelling to the Torres Strait, Equatorial Guinea in Africa, and Venezuela in South America.

My greatest challenge with the thesis is with the language. The information I have been given has been in English, Spanish, French and Afrikaans so I have to listen to my interviews then really think about their ideas, translate them, and then finally write them. That’s a challenge.

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Nursing in war

The ethics of nursing and midwifery, and how these were abrogated during the Nazi era is examined in this book.

Nurses andmidwives actively killed their patients, many of whom were disabled infants, children, and patients with mental (and other) illnesses or intellectual disabilities.

The book gives the facts as well as theoretical perspectives as a lens through which these crimes can be viewed.

It also provides a way to teach this history to nursing and midwifery students, and, for the first time, explains the role of one of the world’s most historically prominent midwifery leaders in the Nazi crimes.

The book has received several glowing reviews, reached 3rd spot on the Routledge History bestseller list, and was recently cited by one of the world’s top Holocaust scholars as “one of the most significant events in Holocaust scholarship in recent times” (Dr Michael Grodin).

Making it up as we go

How and why we create new words in the English language has intrigued people for centuries.

Making New Words in English provides a detailed study of the 200 or so prefixes and suffixes which create new words in today’s English.

Alongside a systematic discussion of these forms, Professor Dixon explores and explains the hundreds of conundrums that seem to be exceptions to general rules. Why, for instance, do we say un-distinguished (with prefix un-) but in-distinguishable (with in-) and why un-ceasing but in-cessant? Why, alongside gold-en, do we say silver-y (not silver-en)? Why is it wood-en (not wood-ic) but metal-l-ic (not metal-li-en)?

The book outlines the criteria employed and there are accounts of the derivation of negative words, and of other derivations which do not change word class, on making new verbs, new adjectives, new nouns, and new adverbs.

The book also deals with combinations of suffixes, of prefixes, and of the two together.

A road story that goes somewhere

Dry Crossing is a tale of redemption, tracking the progress of Dizzy Roundabout, a burnt-out guitarist in an Aboriginal rock ‘n’ roll band who has been criss-crossing the wide brown land for a decade, scraping together just enough money at one gig to get him to the next.

It’s a complicated life. Accepting a national music award in the absence of the lead singer, who has reportedly been taken by a crocodile, is just another day at the office for Dizzy.

Tom between recording in Sydney and the call of romance from an outback roadhouse, Dizzy’s life begins to unravel, until an elderly missionary sets him on a new path.

Professor Marcia Langton wrote of Dry Crossing: “Crazy band members, publicans, missionaries, police, master painters of the Dreaming and girlfriends at roadhouses, all inhabit this glorious novel as it grapples with the strange brand of English spoken by Aboriginal people, their lexicon from ancient languages that has crept into Outback English, and the war of ideas that make claims on people’s souls.”

Russell Guy completed a Masters in sociology at James Cook University in Cairns, publishing his research as Baptised Among Crocodiles: A History of the Daintree Mission 1940-1962.

In an earlier life he was a founding staff member of Two Double Jay (the Sydney radio station that grew up to become Triple J) where he wrote the cult road movie for radio, What’s Rangoon to you is Grafton to me.

Dry Crossing

By Russell Guy

Boolarong Press, Brisbane

ISBN: 9781925236002
JCU electrical and engineering students are pioneering robotics techniques, and having fun at the same time.

The JCU Robotics group, based in Townsville, was developed by a number of JCU’s Electrical and Electronic Engineering undergraduate students under the mentorship of Associate Professor Mohan Jacob.

They hold regular competitions and pit wits against electronics and each other with creations of their own.

JCU’s North Queensland Robotic Sumo competition was recently held at JCU Townsville with robots that its students and members built.

JCU competed against teams from Rowan University (New Jersey) and the Queensland University of Technology, and scooped the pool, taking home first, second and third place.

The competition aims to foster student involvement in robotics and intelligent systems. It focuses on rewarding innovation in sensing and intelligence.

Students from across Australia regularly compete in such competitions, under the official RoboGames unified sumo robot rules, using the Pololu Zumo robotics platform.

Robots are required to meet several RoboGames Autonomous Mini Sumo Class rules, including a 10x10cm base, unlimited height, and a 500g maximum weight.

JCU Robotics Club president Ashley Gillman

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