Not even the smelliest of jobs during school holidays could turn Jonathan Werry off his love of all things marine.

Griffith's resident shark research scientist always knew he would end up working in some aspect of marine biology, and his dream came true when he volunteered his time at Sea World during grade 10.

“My biology teacher at Emmanuel College helped me get some work experience at Sea World. One of the first jobs I was given was cleaning turtle poo but it didn’t worry me as it was a foot in the door and helped me gain some valuable knowledge,” Jonathan said.

Fast forward years of study in marine biology and amazing jobs (shark diver, Great Barrier Reef guide and Nemo breeder, just to name a few) and Jonathan is back where it all began with his bull shark research showcased at a new amazing exhibit which recently opened at Sea World – ‘Shark Attack: Bull Sharks in our Backyard’.

“It’s a dream come true. Sea World has been so supportive of me since school so it is great to be working alongside them and an honour to be involved in their newest exhibit,” Jonathan said.

Both Jonathan and Sea World are committed to learning more about bull sharks in order to conserve these remarkable creatures.

Jonathan’s ongoing research program is examining the movement patterns of bull sharks in the Gold Coast canal system and Broadwater areas.

So far he has found the Nerang river upstream, with its less salty water and supplies of mullet, to be the perfect nursery for young bull sharks.

“The sharks’ strategy to have their juveniles in a river is a good one,” Jonathan said. “They’re safe from predators. The adults will eat the babies.”

In the past two years, Jonathan and his team have dropped thousands of modified long fishing lines baited with live fish, catching and then tagging juvenile sharks.

Acoustic tags placed on 24 sharks connected with beacons established along the river, canals and seaway revealed the path sharks took through the tourist city.

“Once they become teenagers it’s a different story,” Jonathan said. “They use the river and canals, they know it well, but they’re confident enough to risk going out into the outside world.”

He is yet to quantify the number of sharks in the area but believes their presence to be more conservative than widely thought, adding “it’s definitely not thousands.”
A talented group of Griffith University students has been selected to participate in the 2009 Green Steps Program. Griffith University is in its third year of hosting the Green Steps Program which provides businesses and students with practical skills to reduce greenhouse gas emissions and improve their environmental performance.

By 2050, it is projected that much of the Australian workforce will be required to incorporate some aspect of environmental sustainability in their jobs. The challenge is for tertiary institutions to integrate sustainability throughout their curriculum and prepare students for a workforce in which ‘green’ skills will become an absolute requirement.

Griffith currently runs two programs – Green Steps at University, which is open to students across all academic disciplines, and Green Steps at Work for those people already in the workforce. Participants are encouraged to turn talk and passion into action by learning practical, hands-on skills that will help them to create and drive sustainability initiatives in organisations and the broader community.

Students could reduce the host organisation’s carbon emissions by between 50 and 200 tonnes a year and reduce the amount of waste going to landfill by as much as 50 percent. This in turn can generate savings of between $5000 and $10,000 a year.

Griffith Green Steps 2008 graduate, David Thorpe, said Greensteps helped him attain a position in a reputable top-tier law firm. “Green Steps has allowed me to conceptualise how environmental policies operate in the commercial world and has provided me with professional experience in turning theory into practice,” David said.

Since the program’s inception, it has supported more than 450 people in their efforts to become agents of environmental change within organisations, through a combination of training and internships.

Green Steps is a partnership between Griffith University, Monash Sustainability Institute and the Australian Greenhouse Office.

Want a career like Jonathan’s? Why not study Marine at Griffith?

The Bachelor of Marine Science and the Bachelor of Science (Marine Biology major) are two unique offerings on the Gold Coast campus.

With cutting-edge teaching and research strengths in marine studies, this campus is an ideal teaching location, boasting proximity to spectacular coastline, extensive canal systems, surf beaches, diverse habitats, mangrove systems and biodiversity.

Marine Science
This degree provides extensive learning experiences in marine biology, coastal physical sciences and coastal management. In your second and third years, you have the opportunity to specialise in:

- coastal physical science
- coastal resource management
- marine chemical sciences
- marine ecology

Marine Biology
This degree major studies the living world in the sea, focusing on the biology and ecology of marine organisms and ecosystems. It includes extensive fieldwork.

The degree covers:

- coastal environments, such as shore and rocky headlands
- estuarine environments such as seagrass and mangroves
- marine animals
- coastal processes

Marine Science or Marine Biology can take you towards an exciting career in marine research, marine and wildlife tourism, fisheries management, environmental assessment and more!

Want a career like Jonathan’s? Why not study Marine at Griffith University, please visit: griffith.edu.au/marine

Steps towards a greener tomorrow

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If organisations are interested in hosting a Green Steps student for a 12-day internship (November 2009 to February 2010), please contact Meredith Stewart at m.stewart@griffith.edu.au or 5552 8064.
Leading students unite for change

Two Griffith students jetted to Canada in June for the World Student Environmental Summit, as part of a delegation of only 80 students from around the globe.

Lauren Dykes and Zoe Chesters leveraged their energy to address the environmental challenge of climate change. Lauren, a Bachelor of Urban & Environmental Planning/Bachelor of Science student, said she was honed to have been invited to take part in such an important conference.

“Our involvement with the summit grew out of a passion for both nature and exploration,” she said.

“Seeing first-hand what we’ve already done to our finite world and where we continue to head, it is obvious that a change needs to occur. Change will not happen by standing still.”

Lauren and Zoe joined participants from around the world who represented many fields of study and unique world-view perspectives—the event offered a diverse and multi-disciplinary approach in making universities catalysts for positive change.

Carving up the snow may soon be a thing of the past if we don’t act now...

A Griffith researcher has found Australian skiers may need to head across the Tasman in search of higher ground thanks to global warming.

Griffith’s Associate Professor Catherine Pickering presented her research findings at the 10th International Ecology Congress (INTECOL) on the effects of tourism and the environment of declining snow cover combined with hotter summers in the Australian Alps.

Snow cover is already declining in Australia’s alpine regions, and the trend is expected to continue. The average snow cover at Spencer’s Creek in the Snowy Mountains, the highest altitude snow course in Australia, has declined by 30 to 40% in the last 50 years.

Associate Professor Catherine Pickering said the alpine region was one of Australia’s areas most threatened by climate change. Reliance on snow-making was neither financially nor economically sustainable, she said.

“Unfortunately our current emissions and our rises in temperatures are at the high end of the predictions, it’s definitely coming to us sooner than expected.”

By 2020, we’ve found that the amount of water that the ski resorts are going to need to make snow, just to match current conditions, is going to exceed the amount of water that’s used by Canberra.”

Unlike skiers, specialised plants have learnt to survive in the Australian Alps but don’t have the option of seeking out higher ground and may face extinction.

“We are about to lose two of our rarest plant communities, right before our eyes. We need to coordinate the ad hoc research that is happening on our limited snow country.”

Get up to speed with a short course

Short courses assist commencing students to come “up to speed” before starting university study. These courses are particularly useful for students who have no or limited prior study in the study areas, have had a significant break from prior studies or who simply wish to have a refresher course in a particular field.

CHEMISTRY SHORT COURSE
15 – 19 February 2010

The Chemistry short course is designed to help students prepare for further studies which involve chemistry. It is particularly helpful for those who have a weak or non-existent background in chemistry, and for those who have not studied chemistry for a long time.

The course is introductory in nature. Prior knowledge is not assumed. Please note it does not necessarily fulfil any prerequisites. It is designed to give students a head start if their university course requires some knowledge of chemistry and may serve as a useful refresher to those wanting to improve their understanding.

Information will be presented in lectures, small group work, hands-on laboratory experience and problem-solving sessions. The five-day intensive course (from 9am to 5pm) costs $175.
What a waste!

Have you ever stopped to think where your old electronic goods end up when you upgrade to a new Sony Vaio laptop or Apple iPhone?

According to the United Nations (UN), electronic and electrical waste is among the fastest-growing type of trash in the world. Solving the E-waste Problem (StEP) Initiative, set up by the UN to look at the e-waste problem, estimates that e-waste soon will reach 40 million tonnes a year, enough to fill a line of garbage trucks stretching half-way round the world.

In Australia we're reasonably good at recycling through kerbside collections. The materials collected through kerbside collections are largely simple materials such as glass, aluminium and mixed paper that can be sorted and resold on the commodity market. The difficulty with electronic waste is that they are made from a huge range of different materials that are useless for further manufacture until the product is dismantled and the component materials are separated; often a very difficult and expensive process.

E-waste contains some nasties too. Heavy metals including lead, cadmium, mercury and arsenic are used in electronic equipment. When disposed of, they can leach from landfill tips into the soil and water. Waste that was not stored and processed adequately resulted in toxic emissions from burning.

Waste that was not stored and processed adequately resulted in toxic emissions from burning, soil and water contamination from pollutants such as mercury, lead and cadmium leaching, and the inefficient recovery of valuable recyclable materials, Dr Herat said.

“Universities have a unique role in building e-waste minimisation into formal education for engineers and IT professionals, and leading collaborative research projects with published results that will inform both the science and the legal and regulatory debate,” Dr Herat said.

So, next time you rush out to buy the new iPhone or laptop – stop and have a think and make sure you dispose of your old goods correctly and save our environment.

Got e-waste? Have you thought about using the in-store recycling boxes next time you upgrade?

Mandatory recycling of old electronic equipment is a step closer now in Australia, with the nation’s environment ministers agreeing to consider new laws aimed at keeping dangerous and bulky e-waste out of landfill.

School of Engineering, Dr Sunil Herat, who heads up the e-waste research group as part of the StEP Initiative, said Australia lagged behind Europe and the US in tackling the problem but wasn’t alone.

“Electronic waste is a major issue because electronic items reach their end of life very quickly,” he said. UN figures show only a small minority of the world’s population is covered by regional e-waste policy measures. “Most of the items that are collected in the US for recycling end up in China and Africa because it is cheaper to recycle there.”

Two Griffith School of Engineering bursaries have been developed to recognise and reward academic excellence.

The bursaries are valued at $2,000 each. To be eligible, you must be a Year 12 school leaver, OP1 or OP2 recipient and applying for full-time for admission to a Gold Coast, Bachelor of Engineering academic program. To apply for the Griffith School of Engineering bursary you must complete and submit an application, which can be downloaded from the scholarships website www.griffith.edu.au/scholarships. Applications close on 8 January 2010.

Engineering students go global

Griffith engineering students Dejan Subaric, Adrian Frost and Martin Sherston took part in the trip of a lifetime when they completed their work experience in Germany as part of their Engineering degree.

The young men spent 12 weeks at the leading Fachhochschule Giessen-Friedberg, University of Applied Sciences in Giessen, fine tuning their engineering skills in an office environment.

“Participating in the Griffith University overseas work experience program was the best three months of my microelectronic degree,” Dejan said.

“I was able to go to a new country and meet new people with a unique culture and make some great life long friends. It was an excellent learning curve that complements my university studies whilst providing a once in a lifetime opportunity.”

Dejan jumped at the chance to work in Germany although he spoke very little of the language when he arrived. “I can speak a little bit now, whereas I couldn’t really say much when I got there.”

The former Macgregor State High School student said he hoped to contribute exploring the world through his work after graduation.

Microelectronic Engineering covers all areas of today’s electronic world. This degree delves deeply into the technology, design and applications of microchips. Virtually every electronic device used today—from computers, airliners, automobiles, medical devices, mobile phones or children’s toys—contains a microchip. These chips are all designed by microelectronic engineers.

Graduates in microelectronics have employment opportunities in electronics design and fabrication, computing and general engineering fields both in Australia and overseas. Graduates find employment within many multinational companies plus specialist technology companies.

For more information on studying Microelectronic Engineering visit griffith.edu.au/engineering

References:

“Universities have a unique role in building e-waste minimisation into formal education for engineers and IT professionals, and leading collaborative research projects with published results that will inform both the science and the legal and regulatory debate,” Dr Herat said.

For more information about our Engineering programs visit griffith.edu.au/engineering
Students get IT inspiration

Aspiring university students sampled an IT career at Griffith’s annual Inspire Day, held at the Logan Campus.

Managers from five technology companies attended Inspire Day to give local TAFE students an insight into life after an IT degree.

The event highlighted the Bachelor of IT@Work degree to which students must complete a foundation year at university, then enter paid full-time work with a leading IT company, while completing their degree through intensive on-campus summer semesters and off-campus, online courses.

Lead vocational teacher (IT) at Loganlea TAFE and former Griffith University student, Manuela Perez said the Bachelor of IT@Work was a fantastic opportunity for students to walk away with not only a degree but also with practical experience.

“2009 has seen our highest IT enrolments to date with the majority of our students interested in going onto Griffith for the BIT@Work degree as it allows them to study and get paid,” Ms Perez said.

“Jobs across all industry sectors and all disciplines have become more information intense, and as employees become more increasingly reliant on information and communication technologies for their existence, the demand for a range of ICT skills increases.”

Bachelors of IT@Work student Natasha Hurst is in her second year of study and is getting paid to work at her dream job with leading software company, Thoughtware. Natasha wanted a degree that made her “job ready”.

“I love putting the skills I have learnt at Griffith into practice in my job at Thoughtware. It has really given me a grasp of what it is like in a work environment,” she said.

Presenters at the Inspire Day included Trevor Turnbull, Imagetec Director and former Griffith student; Senja Bernhardt, ThoughtWare Australia CEO; Bruce Young, Speedwell e-Business solutions; Peter Maynard, Enigma Interactive; and Kathy Matsushita, Cagin Webs.

To find out more about our IT degrees visit Griffith.edu.au/it-at-work

A glimpse into the future

With driver error the most common cause of traffic accidents due to in-car technology and more traffic on the roads, drivers’ concentration isn’t likely to improve any time soon.

So, if drivers aren’t going to concentrate on the road and with technology continuing on its current path, your car will end up doing the driving for you.

Dr. Jun Jo from Griffith University’s School of Information and Communication Technology, Professor Keesu Kim from Silla University in Korea and Helensvale State High students are developing one of the first driverless cars in Australia.

“Our aim is to develop an eco-friendly car as well as a driverless intelligent car,” Dr. Jo said.

“It will be man-controlled by early 2010 and driverless by 2012 which is not that far away.”

The most significant obstacles facing these vehicles could be human rather than technical: government regulation, liability laws, privacy concerns and people’s passion for cars and the control it gives them.

Helensvale science teacher Roger De Hoed said the students recognised the fantastic opportunity they had, in helping develop a life-changing technology.

“This will impact on everyone’s life and I believe in a positive way,” he said.

Much of the technology already exists for vehicles to take over the wheel: radar-based cruise control, motion sensors, lane-change warning devices, electronic stability control and satellite-based digital mapping.

Driverless vehicles could dramatically improve life on the road, reducing crashes and congestion but will you be happy to pass over the driver’s seat?

A dog playing cards

Professor Estivill-Castro said the robots had more power than humans in a game because they did not show their emotions.

But the professor said his eventual aim was to have robots as companions.

“The whole idea of this is robots helping people, not beating people,” he said.

“We’re working on the giving artificial intelligence for them to learn how to help people. I want to make them friendlier to humans.”

Professor Estivill-Castro said he wanted robots to be able to help people carry their shopping and entertain the sick or injured if they were lonely.

To do that, Professor Estivill-Castro said the robots needed to develop an element of common sense and that was 10 to 20 years off.

“The goal of this is to have a commonsense companion,” he said.

“They can already read the news from a website for someone or surf the web for information.”

What’s new in IT?

Poker face

In 40 years people will not play poker against a machine because they will lose all the time.

That is the view of Griffith University’s Vladimir Estivill-Castro, who has been building humanoid robots Ginger and dog-like robot Fido to play games, including poker and dominoes.

The robots recognise the cards or pieces through a built-in digital photographic imaging system.

Fido is not as advanced as Ginger so the robotic dog has to play poker with bigger cards in order to recognise them.

Professor Estivill-Castro said the robots were programmed to recognise the opponent’s strategies.

“They (the robots) keep strategies on how the other player is playing and switch their ‘personality’ to either become more aggressive or laid back,” he said.

“In a sense it’s big brother watching you. I believe in 40 years time you won’t play against a machine because you will lose.”

To find out more about our artificial intelligence degree visit Griffith.edu.au/artificial-intelligence

A dog playing cards

Daniel Cooper and PhD student Nicholas Dahma at Open Day 2009, suss out if a dog can really beat them at Poker.
Year 11 and 12 high school students from across the Gold Coast were recently invited to attend the Institute for Glycomics Advanced Drug Discovery VIP Student Day: Finding Tomorrow’s Cures Today.

The event gave students an insight into a career in biomolecular research leading to discoveries such as the swine flu vaccine and cancer.

Year 11 Coombabah State High student Leighton Gell-Yule said he dreamt of becoming a researcher.

“Finding a cure for cancer is extremely important and personal to me as my grandma died from the disease,” he said.

Research at the Institute for Glycomics investigates the roles carbohydrates play in disease and ageing. Using this knowledge, the Institute is developing novel drugs and vaccines to interfere with the carbohydrate-related biological process of disease.

This promises a new avenue for the control of a variety of diseases such as cancer, arthritis, multiple sclerosis, food poisoning and infectious disease such as bacterial meningitis, tuberculosis, melioidosis, influenza and malaria.

Head of Biomolecular and Physical Science Professor Frank Clarke said a wealth of career options and chances existed to make a difference in science.

“With ‘bio’ being the buzzword of the 21st century, it’s not surprising students wonder where to start navigating the range of amazing bio-careers,” he said.

“Biomolecular science covers a variety of exciting careers that emerged as a result of recent advances in our biological science knowledge.”

Congratulations to the winners of the Glycomics Advanced Drug Discovery VIP Student Day Quiz:

First Prize: 
Brody Mallard - Shailer Park High School

Second Prize: 
David Fido - Benowa State High School

Third prize: 
Daniel Busch – Queensland Academy for Health Sciences

The 5th Annual Gold Coast Schools Science Trivia Challenge!

Congratulations to the winners of this year’s competition!

Years 6 and 7

• Winners – St Stephens Sharks, St Stephens College
• 2nd place – Galleo Gazers, All Saints Anglican School
• 3rd place – Quizzy Quads, Broadbeach State School

Years 8 and 9

• Winners – Undercover Reagents, Somerset College
• 2nd place – Strange Quarks, All Saints Anglican School
• 3rd place – Alternate Current / Direct Current, All Saints Anglican School

Years 10 - 12

• Winners – Phantom Xyphoid, All Saints Anglican School
• 2nd place – Snake Sali, All Saints Anglican School
• 3rd place – Super Sayams, Somerset College

Teachers team

• Winners – Exscite, Helensvale State High School
• 2nd place – We Love Science, Upper Coomera State College
• 3rd place – Marymount Mentals, Marymount College

Congratulations to all the winners at the Gold Coast Science Schools Science Competition

Winning Primary School category – Elanora State School
Winning Middle School – Helensvale State High School
Winning Senior School – Queensland Academy for Health Sciences

Stephanie Parsons – Keeraba Park State High School won first prize in Senior School Scientific Investigations category - outstanding report and used Griffith spectrophotometer in the process of conducting her project.
Put on your ice-cream container hats...It’s that time of year when riding your bike or skateboard to school is like running the gauntlet – yes – it’s magpie swooping season!

Spring brings with it many changes; flowers bloom, the days warm up and magpies start swooping pedestrians and cyclists.

Magpies swoop to defend their nests while newly-hatched fledglings are at their most vulnerable. Associate professor Darryl Jones said if you encounter a swooping magpie, be sure to walk quickly away, not run.

While male magpie parents have increased levels of testosterone, usually associated with aggressive behaviour, associate professor Jones’ research points to stress hormones being predominantly responsible for attacks.

Darryl emphasised magpie behaviour was “agonistic” rather than “aggressive”, meaning the tendency to swoop is strictly a defence mechanism designed to protect young.

“The absolute majority of magpies don’t attack humans but the minority that have had something happen to them in the past will. Most are completely acclimatised to our presence, they don’t notice us at all,” he said.

A magpie’s life

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Threatened species week

The EcoCentre’s Threatened Species week ran from September 2-8 and introduced people of all ages to some of the amazing plants and animals living alongside Queensland’s human population.

Queensland’s threatened species continue to face ongoing pressures and challenges to their survival.

Frogs are one species of animal finding times particularly tough. Australia is home to more than 200 different kinds of frogs however a drastic decline in frog numbers over recent years is cause for considerable concern.

The rapid decline of amphibians worldwide has generated an international effort to conserve these vital members of our ecosystems.

The amphibian extinction crisis is one of the most serious environmental issues of the 21st century. One-third of the world’s 6,418 amphibian species are currently threatened. At least 100 species have completely disappeared since the 1980s. Amphibians naturally become extinct at a rate of about one species every 250 years.

Due to their high degree of sensitivity, amphibians are one of the best ecological indicators found in our environment. Unfortunately, factors such as climate change, herbicides and pesticides, environmental stress, chemical contamination and habitat destruction have dramatically impacted upon these once thriving species.

Griffith University biologist Associate Professor Jean-Marc Hero has been conducting research into amphibian recovery and disease and has recently formed a global research team to examine the amphibian response to climate change. Initial findings reveal Chytrid fungus spread more rapidly than the frogs could build resistance.

Not only do amphibians play a crucial role in the ecosystem as secondary consumers and as effective biological pest controllers, they are also beloved members of our human art, culture and literature.

Associate professor, Hero has five top tips to help save our native frogs:

- Resist temptation and don’t swim in rainforest creeks. Sunscreens and insect repellents wash off and can poison frogs such as the Flea’s Barred Frog
- Never use soap, shampoo or detergent in a creek when out in the bush.
- Walking up a creek bed may actually impact on frogs and their habitat without you knowing, by trampling frogs and egg masses.
- Keep your garden free of chemicals including insecticides, pesticides and fertilisers.
- Avoid handling frogs at all times unless absolutely necessary.

Congratulations to the following winners of the poster competition held during Threatened Species Week:

Junior Category (prep - 3)
First place: Susan Chen - Wishart State School
Second place: Sienna Coyne - Moorooka State School
Third place: Skye Trenerry - Birkdale State School

Senior Category (4-7)
First place: Georgina White - Sandy Strait State School
Second place: Ethan Todd - Bundaberg West State School
Third place: Judah Salt - Crows Nest State School

To find out more about the EcoCentre visit griffith.edu.au/ecocentre
**Discovery survey**

Tell us what you think about Discovery and go in the draw to win a $100 Coles Myer gift voucher. We want your ideas and suggestions to help make Discovery a great reading experience for you.

### Readership

1. I am a:  
   - High school student  
   - High school teacher/head of department  
   - Guidance officer  
   - Parent  
   - Griffith alumni  
   - Other – please specify:  

2. If you are a teacher, Head of department or guidance officer, do you distribute **Discovery** to your students?  
   - No  
   - Yes – if so, to what year level students?  

3. What gender are you?  
   - Female  
   - Male  

### What I like about Discovery

4. Please indicate the types of stories that interest you the most.  
   - Choose your top three.  
   - Student profiles and achievements  
   - Career outcomes  
   - New programs of study  
   - Events  
   - Competitions and games  
   - High School updates and achievements  
   - Other – please specify:  

5. The section I most like about **Discovery** is  
   - What’s hot  
   - Environment  
   - Engineering  
   - IT  
   - Science  
   - What’s new  
   - What’s on  

### Why I read Discovery

6. How would you describe your reading habits of **Discovery**?  
   - I read most editions thoroughly  
   - I read most editions, but just a few sections  
   - I occasionally read **Discovery**, but just a few sections  
   - I rarely read **Discovery**  

### How I want to read **Discovery**

7. If you are a student, please select the statement below that most closely matches your reason for reading **Discovery**?  
   - Encourages me to apply to university  
   - Helps me decide what to study at university  
   - Provides inspiration for teaching topics in the classroom  
   - Exposes me to a wide variety of careers in Science, Engineering, Environment and Technology  
   - Starts me thinking about possible careers  
   - Provides information and advice about universities  
   - Helps me keep up with new programs, information and events to advise students  
   - Not applicable  

8. If you are a high school teacher, please select the statement below that most closely matches your reason for reading **Discovery**?  
   - Encourages me to apply to university  
   - Helps me decide what to study at university  
   - Provides inspiration for teaching topics in the classroom  
   - Exposes me to a wide variety of careers in Science, Engineering, Environment and Technology  
   - Starts me thinking about possible careers  
   - Provides information and advice about universities  
   - Helps me keep up with new programs, information and events to advise students  
   - Not applicable  

### Readership

9. How often would I like to receive **Discovery**?  
   - Once a year  
   - Twice a year  
   - Three times a year  
   - Other – please specify:  

10. I receive my copy of **Discovery**?  
    - Via email  
    - Direct via post  
    - Collected at a student related event  
    - Other – please specify:  

11. I would prefer to receive my copy of **Discovery**?  
    - Via email  
    - Direct via post  
    - Other – please specify:  

12. Do you have any other suggestions/comments for **Discovery**?

Thanks for your time. Please provide an email address or phone number to enable us to contact you should you be the lucky prize winner.

**Please post your completed survey to:**

Ivett Guerra  
External Relations  
Griffith University Gold Coast campus  
Brisbane QLD 4222

**To order additional copies of Discovery:**

Email: discovery@griffith.edu.au

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**Cutting Edge Science Learning Day**

**Professional Learning Day**

Monday 30 November 2009 – Nathan campus  
Tuesday 1 December 2009 – Gold Coast campus

Griffith University in partnership with Education Queensland is pleased to host the Cutting Edge Science Professional Learning Days for teachers of Science (Primary, Middle and Senior), teachers of Geography and Scientific Operations Officers.

The days aim to develop participant confidence with regards to knowledge and skills in the areas of cutting edge science and science education in order to enhance student engagement and learning outcomes in the classroom setting.

**To register**

Registrations close 16 November  
griffith.edu.au/cutting-edge-science-days

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**Life after Year 12**

**Key dates to lock in your diary**

**Saturday 19 December**

OPs released – available online via ‘Smart OP Service’. Students should receive via post on 21 December 2009.

**Tuesday 22 December**

Options Information Evening – 4pm-7pm  
Southbank and Gold Coast G17 & S05

**Wednesday 31 December**

QLD year 12 students without an OP can find out their rank.

**Wednesday 6 January**

Due date for school leavers to lodge applications and change preferences for inclusion in the January offer round.

**Thursday 14 January**


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**Discovery is now printed on Envirocare 100% recycled paper as part of Griffith University’s commitment to environmental sustainability.**

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**Phone:** 1800 154 055  
**Web:** www.griffith.edu.au  
**Email:** student_enquiry@griffith.edu.au

**Staff writer:** Skye Roberts  
**Editorial coordinator:** Ivett Guerra  
**To order additional copies of Discovery:**

Email: discovery@griffith.edu.au

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