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A clever twist in thinking by a mechanical engineer has created the holy grail of artificial hearts, although those who benefit from it will have to do without a heartbeat.

QUT alumnus Dr Daniel Timms said this dramatic leap away from conventional artificial heart design was simple once he realised that the body didn’t really need its pumping action to survive.

Dr Timms’s work on the BiVACOR heart was honoured with the QUT Young Alumnus of the Year award at the 2013 Outstanding Alumni Awards.

‘Hundreds of millions have been spent on developing an artificial heart but most were modelled on the way the heart works, and were too large and didn’t last for long,’ he said.

‘The shift in thinking to researching a device that would deliver a continuous flow of blood, rather than trying to copy nature, was like our first attempt at flight—we thought we had to replicate bird flight and so early flying machines had flapping wings.

‘BiVACOR has been a progression over 13 years. We still have a long way to go, maybe five years, until we can test it on humans.’

The BiVACOR is a fist-sized piece of titanium with one internal moving part that creates centrifugal force to deliver a constant flow of blood around the body. It is designed to replace only the lower chambers of the heart and would be sutured to the remaining upper two chambers of the existing organ.

Dr Timms gained a Bachelor of Engineering (Mechanical) and PhD in biomedical engineering at QUT, where he started investigating artificial hearts 12 years ago.

His research has taken him on expertise exchanges to Japan, to perfect the magnetic impeller at the ‘heart’ of his heart, and to Germany, to apply precision engineering techniques to manufacture the device.

‘The Prince Charles Foundation has supported our project all the way through—lots of strawberries and ice cream at the Ekka have gone into our research,’ he said.

Dr Timms said he had always had his sights set on working with the heart transplant surgeons at the Texas Heart Institute. When one of its top surgeons Dr Billy Cohn first saw the BiVACOR device he told Dr Timms he thought it would be the first practical replacement for the human heart—the heart transplant holy grail.

‘So not only did I get through the door, they took the hinges off for me and invited the project over, then found the $2.1 million required to relocate our team to Texas from a philanthropist with a close association with the hospital,’ he said.

‘I moved to Houston and will be dividing my time between there and the QUT research lab at Prince Charles Hospital.’

More information www.bivacor.com
Architects flex olympian talent

A dynamic design duo is transforming cultural events across the world.

By Niki Widdowson

If you cheered the Wallabies on at ANZ Stadium, watched from the stands as Andy Murray won Wimbledon, or stared in awe as U2 wowed the new Wembley Stadium audience, you’ve sat inside the work of the joint 2013 Outstanding Alumni Award winners.

Rod Sheard and John Barrow, senior principals of UK architectural firm Populous, have been singled out as this year’s star alumni for their dedication to and leadership of their profession.

Populous is behind the inspiring design of the Sydney and London Olympic stadia, the upcoming Winter Olympics’ facilities in Sochi, Russia, the fabulous new roof over Centre Court at Wimbledon, the revamped Ascot Racecourse in London and the new Wembley Stadium, London.

Mr Barrow and Mr Sheard graduated from QIT (a QUT predecessor institution) with a Diploma of Architecture in separate years in the 1970s. Both soon beat a path to London where first Rod and later John gravitated to what would become the world’s largest specialist sports architecture practice.

Mr Sheard said growing up in Australia meant sport was always going to be part of his life, but architecture was always going to be his vocation.

‘My grandfather was one of the founders of tennis at Milton and my family was heavily into sport. I played tennis until I was 18 but lacked the killer instinct,’ he said.

‘I never connected the two until I came to London and started working in an office that just happened to be working on a small sport building.

‘In those days sports buildings were seen as rather utilitarian buildings, more an engineering challenge than a work of art. In the next 30 years the genre evolved from small-scale, low-profile venues to structures that could put a city on the international map and provide a community with a sense of identity that no other building type can do.’

Mr Sheard masterplanned and designed the Sydney and London Olympic stadia and facilities.

‘When we designed Sydney it was the first Olympic Stadium to explore the idea of changing the size after the Olympics had left town, predominantly for economic reasons.’

London’s 2012 Olympic Stadium followed suit—its 80,000 capacity has since been downsized (thanks to its removable top bowl) to a smaller stadium just right for ‘local’ football games or concerts. This
ensured it remained a viable legacy, unlike some Olympic stadia too expansive and expensive to run that become beautiful white elephants.

Mr Barrow started off wanting to be an aeronautical engineer and gained a pilot’s licence at 17, before he got a driver’s licence.

‘Soon after, I became passionate about architecture,’ he said. ‘This evolved into a focus on sport and entertainment, and how these facilities can have such a profound effect on the neighbouring community and, in some cases, on an entire nation.’

Mr Barrow directed the stadium project that will host the Winter Olympic and Paralympic Games in Sochi, Russia, early next year.

Again, this stunningly designed stadium has elastic capacity to future-proof it for further international gatherings—seating can be increased to 45,000 for the 2018 FIFA World Cup, up from 32,000 for the Winter Olympics, and then down to 25,000 for local use.

‘The stadium will be used mainly for the opening and closing ceremonies and medal presentations. It will form one of this Games’ main icons which will showcase the whole nation of Russia,’ he said.

‘It captures the views from inside to the sea in one direction, and to the mountains in the other direction. The stadium evokes memories of the gorges and valleys linking the mountain venues to the Olympic Park.

‘It’s visible for kilometres in every direction and is designed to become a beacon and lasting memory of the Games.’

And Populous is designing several FIFA World Cup 2018 stadia as well as working on both the Brazil World Cup 2014 and Rio 2016 Olympics.

BRIGHT WORK: Some of Populous’s recent projects include (clockwise from below) Sochi 2014 Olympic stadium, in Russia; London’s Olympic park remodel; and the revamp of the All England Lawn Tennis and Croquet Club—home of Wimbledon tennis tournament.
A flood recovery champion, a Bhutan legal trailblazer and a teacher who created a school are among this year’s QUT Outstanding Alumni and Special Excellence Awards winners.

It’s January 12, 2011, and the bustling western Queensland city of Toowoomba—700m above sea level—is hit by a flash flood. Cars parked near the CBD are washed away, occupants scrambling on bonnets, trees, fences—anything to try to escape the torrent.

The tiny agricultural town of Grantham, 100km west of state capital Brisbane, sits below Toowoomba on the lower slopes of the Great Dividing Range. It’s next to endure the full blast of the water, sweeping people, cars, livestock and whole houses away. Rescue teams in helicopters, including the Australian Defence Force’s Black Hawke 220s, swoop again and again to save people—sometimes entire extended families—stranded on rooftops.

‘It was the worst carnage I have seen,’ Major General Paul McLachlan—who has served 30 years in the ADF—told reporters in the days after the flash flood. ‘Grantham has continually shocked everybody who has been in there, including guys with experiences of East Timor in early operations.’

It was one link in a tragic chain of events that claimed lives, cost more than $2 billion and earned disaster zone declaration for three-quarters of the state.

Major General McLachlan was head of the ADF’s Joint Taskforce 637, a complex operation that deployed 1900 ADF troops to help put Queensland back together. It saw ADF men and women in dangerous high-weather rescues, delivering lifesaving supplies, searching the debris for the missing, and helping to move tonnes of mud off suburban streets.

Major General McLachlan’s work orchestrating this, the largest home deployment since Cyclone Tracy hit Darwin on Christmas Eve in 1974, has earned him widespread praise including the Conspicuous Service Cross—and now a 2013 Outstanding Alumni Faculty Award.
Award—Business. He holds Graduate Certificates in Management and Business Strategic Procurement from QUT.

He joins an impressive list of winners of this year’s Alumni faculty and Special Excellence Awards, which includes a woman who is blazing a trail in a tiny Himalayan kingdom, a dietician transforming the way healthcare providers think, and a law maker determined to make a difference.

For Special Excellence Award winner Tashi Chhozom, it’s been a long road to Justice. After studying undergraduate and post-graduate law in Mumbai and Bhutan, she achieved a Master of Laws at QUT in 2010. Last year, Justice Chhozom became not only Bhutan’s first woman Justice of the Supreme Court but also the youngest person to date to hold that position.

Justice Chhozom said she aspired to the position so she could bring real and positive change to the lives of women and children in her country by working to ensure her colleagues were aware of their unique issues.

‘We don’t have a lot of gender discrimination in Bhutan but I always believe it is better to be proactive,’ Justice Chhozom said.

I pay special attention to family and divorce cases. We have some private lawyers now which makes the job easier but we need to get a lot more people qualified to help solve issues and mediate disputes.’

Jarrod Bleijie is also determined to solve legal dilemmas. Queensland’s State Attorney General and Minister for Justice was honoured with an Outstanding Alumni Award—Law, following his work to toughen laws around sex offences, organised crime and illicit drug manufacture. The recent crackdown on outlaw gangs has seen the Attorney General at the forefront of community commentary.

Prior to his election, Mr Bleijie practiced business, corporate and property law with Sunshine Coast firm Sajen Legal.

Protecting the innocent was a recurrent theme for this year’s Alumni award winners. Royal Brisbane and Women’s Hospital Nutrition and Dietetics director Dr Merrilyn Banks was honoured with dual accolades of the Outstanding Alumni Award—Health and a Special Excellence Award for protecting the most vulnerable of citizens.

The Health Science PhD’s work to change the way the health and aged care industry think about the role of nutrition and food safety is improving the lives of patients all over the world. Her research demonstrated an unequivocal link between nutrition, pressure ulcers and the economic costs of treatment. And a Malnutrition Screening Tool which she co-authored is now routinely used in Australia and internationally.

Education faculty winner, Dr Lyn Bishop, has also dedicated her life to changing the way people think—through education. After a long career working in the government-run system, she founded independent school Sheldon College, near Brisbane, which embraces the motto: Love, laughter and learning.

Dr Bishop said she operates by her mother’s favourite maxim: ‘Fate is what happens to you. Destiny is what you create.’

Engineer John Russell can certainly relate. The Science and Engineering faculty winner worked for a large mining company before creating his own path. The 1979 QIT graduate chose Toowoomba to set up a company trading in his foremost passion—invention. The result was the RME Mill Relining System, which is shipped all over the world and is saving the industry millions of dollars in machine downtime. His company, Russell Mineral equipment, now has an annual turnover of more than $90 million.
Success calls

CEO of QSuper and member of QUT Council Rosemary Vilgan has received the nation’s most prestigious women’s business award. Ms Vilgan, a business graduate, was not only crowned the 2013 Telstra Australian Business Woman of the Year, she also won the Community and Government Award. Ms Vilgan helped establish QSuper, which is now one of Australia’s largest superannuation funds.

Ms Vilgan and fellow business graduate Jellaine Ross dominated the Queensland finals of the Telstra awards. Ms Ross, owner of Cherry Blooms at Stafford, took out the Queensland Young Business Women’s Award.

Hope for migraine sufferers

A new treatment could drastically reduce migraine severity and frequency in about 20 per cent of sufferers. Professor Lyn Griffiths (pictured), the new Executive Director of QUT’s Institute for Health and Biomedical Innovation (IHBI), and her team of geneticists are in the final stages of trialling a combination of vitamins that, together, help one migraine-implicated gene to function properly. ‘This Phase 3 trial is focused on dosage levels and, if it proves successful, we expect to have a tablet on the market in just over a year,’ she said. Professor Griffiths comes to QUT from Griffith University’s Genomics Research Centre, where she explored genes involved in common complex disorders such as cardiovascular disease and several types of cancer. She urges migraine sufferers to join the Headache Register at headacheaustralia.org.au

High praise

QUT was ranked as Australia’s top university under 50 years old in The Times Higher Education Top 100 Under 50 rankings. The university jumped 14 places to be positioned 26th in the world among universities less than 50 years old. The accolade comes at the same time as individual courses enter the spotlight. In the UK-based Financial Times’ Top 40 Masters in Finance ranking, QUT’s Master of Business (Applied Finance) was the only Australian pre-experience Masters to make the list. The course, which sits within the QUT Business School, was placed 40th internationally. And the Australian-published The Financial Review Boss MBA Ranking placed QUT’s MBA program as the third best in the nation and the Executive MBA program at number four. Both programs are offered through QUT’s Graduate School of Business.
Research gains

QUT welcomes several new collaborative research centres and partnerships, designed to bring diverse academic strands together to find new solutions to some of humanity’s greatest challenges:

**Essential care:** The Centre of Research Excellence for End-of-Life Care will be established at QUT, led by Professor Patsy Yates, after a team of interdisciplinary researchers from IHBI and the Faculty of Law received $2.5 million from the National Health and Medical Research Centre. The Centre will address key issues emerging from an ageing population in which almost 100,000 deaths are expected in Australia each year from serious, life-limiting, chronic conditions such as dementia, cardiovascular and respiratory diseases and cancer.

**Safe as houses:** QUT’s new Commercial and Property Law Centre will review Queensland’s more significant property laws—some more than 40 years old—in order to streamline and simplify how people buy, sell and manage property. QUT Law Professor Bill Duncan, one of the coordinators of the centre, said this would include laws to reflect innovation such as electronic conveyancing.

**Creating more liveable communities:** QUT is a partner in a new NHMRC Centre of Research Excellence in Healthy, Liveable and Equitable Communities. Professors Gavin Turrell and Simon Washington will lead the QUT component of the project. The centre will bring together a team of international researchers to identify the most cost-effective improvements to the built environment to create healthy, liveable and more equitable communities. It will study the impact of human-made environments on chronic disease, physical activity, obesity and mental health, and how the built environment can better support health and wellbeing in the context of rapid population growth.

**Minding the mines:** QUT Business School will partner with Austmine in a new mining innovation partnership to be established in Brisbane. The partnership with Austmine, Australia’s leading association of Australian Mining Equipment, Technology and Services (METS), aims to ensure the industry’s competitiveness into the future. Other key partners include Brisbane Marketing and CSIRO.

**Drive for efficiency:** A team of QUT academics, headed by Professor Lionel Page and Associate Professor Rob Perrons, will undertake the EEV Future Regional Market and Technology Uptake Study, after securing a grant from AutoCRC. The project will analyse barriers to the take-up of energy-efficient vehicles in four Asian countries. Malaysia Automotive Institute is a partner on the project.

Bright future

Research projects tackling both addiction and invasive weeds have earned two QUT researchers the state’s top honours for women in technology. Professor Selena Bartlett, from QUT’s Institute of Health and Biomedical Innovation (IHBI), was awarded the Women in Technology (WiT) Biotech Research Award as well as the Biotech Outstanding Achievement Award. ‘It’s so important for women entering the field to have role models to look up to,’ she said. ‘I’ve always said I didn’t want to work hard to get into senior roles and then pull the drawbridge up behind me—I want to help other women cross over too.’ Professor Bartlett, who is also a part of the Translational Research Institute (TRI), has dedicated much of her career to the often forgotten field of addiction and related mental health disorders. Fellow QUT researcher Dr Jennifer Firn, from the Science and Engineering Faculty, was named the WiT Rising Star for her research on controlling invasive exotic plants such as African Love Grass, by combining strong ecological principles and the knowledge of land managers.
The role robots will play in humanity’s future was explored in QUT’s Robotronica spectacular.

Held in August and drawing 17000 people to the Gardens Point campus, the event showcased the latest in robotics research and development.

Highlights included keynote speaker Professor Hiroshi Ishiguro and his life-like twin robot Geminoid. The robot was developed to probe psychological reactions to a machine that looks and acts like a human.

The graceful Diamandini, a sculpture that interacts with people according to their body language, was installed in Old Government House. QUT’s farm helper AgBot demonstrated how it could save the wheat industry as much as $620 million a year on weeding costs.

A team of humanoid androids called Naos showed through dance how they could help teach the skill of programming.

The event finale included a performance by Brisbane-based band 7bit Hero, world leaders in combining music and electronic gaming. This was followed by an aerial light display of the largest swarm of flying robots ever seen in the Southern Hemisphere. Staged by Austrian-based Ars Electronica Futurelab, 30 Spaxel quadcopters took to the air accompanied by a laser light show.

Ars Electronica Futurelab became involved in the event after holding a master class for final-year game design and interactive and visual design students. The Ars Electronica Futurelab Academy was an opportunity for students to work in inter-disciplinary teams, on an applied research-based project, that created real-world outcomes. The top projects were presented at the world renowned Ars Electronica Festival in Linz, Austria. For more information visit www.thecube.qut.edu.au/projects/ars-electronica-futurelab-academy

HI-TECH: (clockwise from left) A Nao; crowds watch the quadcopter light show; Diamandini; and QUT robotics specialists with members of Ars Electronica holding a quadcopter.
Imagine Leo Tolstoy’s epic novel War and Peace etched on the head of a pin—200 times. That’s the power of QUT’s new Zeiss Orion NanoFab.

The only one of its kind in Australia, the tunnelling microscope enables researchers to examine natural or man-made nano-structures in incredible detail.

By increasing the microscope beam current, researchers are able to etch away material to create patterns or structures with features of only a few nanometres. It can even write lines 100,000 times finer than the text on a printed page.

Science and Engineering Faculty Associate Professor Nunzio Motta said the new microscope would boost nanotechnology research, particularly into efforts to design a more efficient and cheaper plastic solar cell.

‘At the moment plastic solar cells are quite inefficient,’ Professor Motta said.

‘But in the future, plastic solar cells could generate enough energy not only to recharge the batteries of laptops and mobiles, but even to obtain power from canopies on parking areas which could be fed back into grids.

‘They could even be developed as a clear film on glass windows to produce power.’

Professor Motta said his research team also hoped to create a new class of solar-powered nano-sensors capable of detecting pollution and monitoring the environment in remote areas.
Innovation vital

New research into Australian Mining Equipment and Technology Services (METS) is revealing the sector’s secrets. QUT Business School researchers Professor Rachel Parker and Dr Stephen Cox analysed METS and found their international growth was hampered on several fronts due to the nature of the mining industry, its procurement processes and the short-term nature of the financial market. Meanwhile, QUT Australian Centre for Entrepreneurship Research’s Dr Henri Burgers and his team found Australian METS providers might be smaller in scale than their international rivals, but they made more money from new, cutting-edge products.

New weapon

Parents are being taught how to fight the food war in a new, free QUT-delivered program. The $5 million program called PEACH (Parenting, Eating and Activity for Child Health) is available to Queensland families with a child 5-11 years who is above a healthy weight for his or her age. It is the largest obesity intervention program to date in the State. The target is to deliver the program to 1400 families, who will attend 10 sessions over six months. Information: www.peachqld.com.au or call 1800 263 519.

Toward a cleaner world

First-of-its-kind software developed at QUT is helping Australia reduce greenhouse gas emissions across its agricultural landscape. Professor Peter Grace coordinates the National Agricultural Nitrous Oxide Research Program (NANORP), which aims to develop strategies to assist farmers and other landholders reduce greenhouse gas nitrous oxide emissions while maintaining productivity levels. He said the value of the research had been boosted by the addition of a purpose-built program developed by QUT software engineers. Called Semaphore, it connects researchers via one online interface and thus reduces the time it takes to do many tests from five days to one.

Commuter calm

QUT transport experts have designed an alert service that warns subscribers when their travel route is congested or public transport is delayed. Dr Marc Miska from the Smart Transport Research Centre, hosted by QUT’s Science and Engineering Faculty, said it was the commuter version of severe weather alert texts but instead of broadcasting blanket warnings to everyone, this system sent targeted emails based on preferences users set. The service gathers its transport intelligence by mining government data and feeds as well as social media posts and tweets. Register at www.seqcommuter.info

Gift of giving

The latest Giving Australia report shows the country is rediscovering its deep pockets after a two-year, GFC-induced charity speed bump. QUT’s Australian Centre for Philanthropy and Nonprofit Studies (ACPNS) researchers examined tax records and found we gave $2.21 billion in tax deductible gifts in 2010–2011, a jump from $1.96 billion in the previous period, with women more generous than men. ‘The devastation of the Queensland floods and Cyclone Oswald prompted a lot more people to give—another 390 000 people claimed tax deductions for donations bringing the total to 4.79 million or 37.93 per cent of taxpayers who claimed charitable tax donations,’ ACPNS director Professor Myles McGregor-Lowndes said. ‘We have become more affluent; charitable organisations have consolidated and professionalised and are using more sophisticated fund-raising techniques.’
By Alita Pashley

A new Indigenous research network promises to change Australia’s approach to higher education.

The National Indigenous Research and Knowledges Network (NIRAKN), funded by the Australian Research Council and headed by QUT’s Professor Aileen Moreton-Robinson, comprises Indigenous researchers from 22 universities and research institutes across the country.

QUT Vice-Chancellor Professor Peter Coadrlake said the network was an important step in growing the collective knowledge of Indigenous academics at varying stages of their careers.

‘We are looking to connect Indigenous researchers across disciplines nationally and internationally to develop a culturally supportive, inclusive research environment,’ Professor Coadrlake said.

‘There’s a discrepancy between the number of established Indigenous and non-Indigenous researchers in the higher education sector and it continues to grow. This network is an important step toward reversing this trend.’

Professor Moreton-Robinson said funding a network that would support Indigenous postgraduates to fill research positions and create new Indigenous knowledge was critical to meeting promises to ‘close the gap’.

‘In 2012, closing the gap would require Indigenous postgraduate numbers and completions to increase by 600 per cent to attain parity with population proportions,’ she said.

‘It has been well documented that the universities who are hitting population parity figures are the universities which have strong Indigenous research role models, methodologies and mentors available to students within their field of study.

‘These factors combined with the dire Indigenous position on every socio-economic indicator require fresh approaches to research that ask new questions to produce new data and knowledge to inform policy and improve program delivery.’

‘There’s a discrepancy between the number of established Indigenous and non-Indigenous researchers in the higher education sector and it continues to grow. This network is an important step toward reversing this trend.’
DEATH

at the top of the world
‘The brotherhood of the rope’—climbers risking their lives to save other climbers in danger—is unravelling on Mt Everest thanks to commercialisation.

QUT researchers David Savage and Professor Benno Torgler discovered this worrying social change while studying the behaviour of climbers on the world’s tallest mountain, for the School of Economics and Finance. Their working paper was released on the eve of the 60th anniversary of the first ascent of Mt Everest by Sir Edmund Hillary and Sherpa Tenzing.

Mr Savage said the investigation was sparked by a comment attributed to Hillary in 2006, made after 40 Everest climbers walked past British climber David Sharp as he lay dying of altitude sickness.

‘Hillary was widely reported as saying “On my expedition there was no way that you would have left a man under a rock to die”,’ Mr Savage said.

‘Hillary criticised the commercialisation of Everest and went on to say: “I think the whole attitude towards climbing Mt Everest has become rather horrifying. The people just want to get to the top.”

‘Taking a behavioural economics perspective, we set out to discover whether he was right and to what extent commercialisation had shifted the norms of pro-social behaviour in the extreme life-and-death environment of the Himalaya.’

Mr Savage said traditional mountaineers like Hillary, who climbed for the personal joy of it, were part of a fraternity of climbers who had developed a strong culture based on altruism and reciprocity. ‘Traditional, or non-commercial climbers, return to Everest again and again; they build up a bond with other traditional climbers and Sherpas through repeated interaction,’ he said.

‘This leads to a greater emotional attachment and a willingness to stop their ascent to help other traditional climbers, which is enhanced by the fact they know they will have another attempt next year.’

The one-off, commercial climbers pay upwards of $65,000 to be taken to the top by an experienced Everest summiter. Mr Savage said this class of climbers could be viewed by many traditional climbers as not having a legitimate reason for being there. ‘They lack the experience, dedication and training a traditional climber invests in a lifelong involvement in the sport and so they are viewed as outsiders who feel no allegiance to the traditionalists’ social norms,’ he said.

‘There is no chance for the traditional climbers to sanction commercial climbers for transgressing the norms or to be recipients of their help because theirs is a once-in-a-lifetime trip to tick Everest off their bucket list.’

Mr Savage and Professor Torgler statistically analysed the 60 years of Himalayan climbing data, covering 6300 expeditions, 285 peaks and more than 47,000 expedition members, from 1950 to 2009. They found there was a marked difference between how traditional climbers and commercial expeditions acted after a death occurred on the mountain at the time of their climb.

‘We observed that 80.6 per cent of the commercial expeditions with a death succeeded to the top while only 37.8 per cent of the non-commercial expeditions did, which may indicate (non-commercial climbers) were more willing to halt their attempt to attend to a comrade,’ Mr Savage said.

‘Worryingly, the results also show that the effect of a death has waned and become less important for the non-commercial groups as well.’

In order to further understand these findings, the researchers are currently undertaking a large-scale project looking at the attitudes and beliefs of climbers in the Himalaya.

The projects are funded by the Future Fellowship Grant awarded to Professor Torgler by the Australian Research Council (ARC), supported by QUT and Alpine Lodge, Namche Bazaar, with the help of Tenzing Sherpa and eTrek www.etreknepal.com
Get back to real nature

By Amanda Horswill

Feeling a bit tense while sitting at your work desk? Set your computer background to a wildly natural scene, sit back and enjoy.

Studies have shown just looking at that scene will help you to relax and refresh, QUT academic Eric Brymer says, but researchers are only just beginning to understand why.

Dr Brymer said discoveries in the relatively new fields of ecotherapy and ecopsychology would provide new solutions to old problems such as occupational stress and chronic anxiety. His team’s latest work to create a roadmap guiding how to interpret and apply this research will make those changes more relevant to everyday life.

‘Current research has found that just looking at a natural environment has a positive impact on a person’s sense of wellbeing,’ Dr Brymer said.

‘Most of the research to date has been through the evolutionary lens—that we are programmed by our earliest development to feel that way.

‘We argue for a more functional perspective, that it is something to do with the natural world’s multiple invitations to be active, and the huge range of emotional experiences promised by that action.

‘Nature allows people to be fully human, to reach their full potential in terms of emotional responses and physical experiences. The new theoretical framework aims to support that type of investigation.’

So, if we can just look at a picture of nature, does that mean we never need venture outside to gain this beneficial effect?

‘I am not saying that at all,’ he said.

‘The best benefits come from when we are truly involved in the natural world: Growing herbs and then cooking with them; walking through bushland and observing wildlife; hiking up mountains to witness a beautiful view. The more the activity is vigorously involved with the natural world, the more reward.’
Cracking the koala code

By Alita Pashley

Dual discoveries could save Australia’s cuddly icon from decimation by disease.

A world-first project by QUT and The Australian Museum has mapped the genome of the koala, and in the process uncovered a vital missing link in scientists’ understanding of how koalas respond to infectious diseases.

Called the koala interferon gamma (IFN-g) gene, this chemical messenger plays a key role in the iconic marsupial’s defence against cancer, viruses and intracellular bacteria.

QUT’s Professor Peter Timms said the gene was the key to finding a cure for diseases such as Chlamydia and Koala Retrovirus (KoRV), currently threatening the vulnerable species.

‘We know koalas are infected with various strains of Chlamydia, but we do not know why some animals go on to get severe clinical disease and some do not,’ Professor Timms said.

‘Identifying these genes in the koala will be a major step forward to understanding why.’

The research team—Professor Timms, Dr Adam Polkinghorne, Dr Ana Pavasovic and Dr Peter Prentis from QUT; The Australian Museum; veterinarians from Australia Zoo and the Port Macquarie Koala Hospital; and bioinformaticians from Ramaciotti Centre and UNSW—have used the finding to develop a molecular test to measure IFN-g expression in the blood of koalas.

The test has already been carried out on a small group of wild koalas taken to the Australia Zoo Wildlife Hospital suffering ocular and reproductive tract disease. The results will allow researchers to pull apart the complex immune response to better understand how to successfully treat and immunise the vulnerable koala population.

At the same time, Professor Timms and researchers from Cells and Tissue at QUT’s Institute of Health and Biomedical Innovation (IHBI) have formulated and successfully tested a Chlamydia vaccine for koalas that could be available for use on wild populations within two years.

The Australian Koala Genome Mapping Program was funded by QUT, The Australian Museum, Bioplatforms Australia and the state and federal Governments.
Next time your kids complain about putting on sunscreen, tell them this: Sunscreen shields a superhero gene that protects them from cancer.

A molecular-level, human skin study has proven for the first time that sunscreen provides 100 per cent protection against all forms of skin cancer. It also shields the body’s natural cancer prevention system, the p53 gene.

The study, by the AusSun Research Lab based at QUT’s Institute of Health Biomedical Innovation (IHBI), looked at the impact of sunlight on human skin and found no evidence of cancer-causing UV-induced skin damage when SPF30+ sunscreen had been applied properly to an exposed area. And it showed applying that sunscreen prevented mutations in the p53 gene.

Lead researcher Dr Elke Hacker said the findings were significant because the effectiveness of sunscreen had been the subject of academic debate since it first appeared for sale in the 1930s.

‘In Australia we have strong standards around sunscreens and their ability to protect against erythema [redness of skin],’ Dr Hacker said.

‘But this research looks beyond the redness to determine whether UV exposure when using sunscreen causes molecular changes to the skin, which can enhance skin cancer development.

‘And as soon as our skin becomes sun damaged, the p53 gene goes to work repairing that damage and thereby preventing skin cancer occurring. Over time if skin is burnt regularly the p53 gene mutates and can no longer do its job.’

Dr Hacker said the study also provided a baseline measurement of molecular responses to UV exposure, which would now be used to investigate post-sun exposure treatments, such as super sunscreens, to assist in the repair of sun damaged skin.
A QUT invention could save elite athletes unnecessary agony and sport clubs hundreds of millions of dollars in lost player time.

Dr Tony Shield, from the Faculty of Health, said the prototype on-field hamstring muscle tester helped single out those players most likely to ‘do’ their hamstring.

‘Hamstring muscle ‘tears’ are the most common sports injury in the world, with injured players typically missing three to six weeks of competition and training,’ Dr Shield said.

‘Players are also likely to reinjure the muscle in the 12 months following an initial injury.’

The device tests ‘eccentric’ strength—the amount of force that a muscle can generate while it lengthens. Previous research suggests that athletes whose legs have different eccentric strength levels are more likely to injure one of their hamstrings.

The portable device, funded by qutbluebox, is being trialled by AFL clubs and elite track and field athletes, and had sparked interest from English premier league soccer clubs such as Manchester United, Liverpool and Chelsea.

Deep freeze therapy not so cool

By Niki Widdowson

After enduring gruelling combat on the rugby field, the British and Irish Lions players put themselves through an arguably harder challenge—two minutes standing in the coldest place on earth, dressed only in their underwear.

Dr Joseph Costello, from QUT’s School of Exercise and Nutrition Science, said the cool-down treatment called whole body cryotherapy (WBC) required athletes to endure two to four minutes in a -100˚C chamber -50˚C lower than Antarctica—with a hope of a speedier and less painful recovery from intense exercise.

However, Dr Costello said his research had found the treatment did not reduce skin temperatures sufficiently to reduce pain, nor delivered any additional benefits in strength recovery.

Dr Costello had two groups of volunteers undertake 100 knee extensions to exercise the quadriceps muscle. He put one group through two sessions of WBC, and the other spent time in the same chamber but at 15˚C.

‘We found muscle strength was reduced by 40 per cent in both groups post-exercise,’ he said.

‘Muscle strength did not return for at least 96 hours following the exercise bout and there were no differences between the WBC and the control group at any time during recovery.’
An all-star group of alumni choreographers has returned to help celebrate QUT Dance’s 35th anniversary. Spectacular ballet-acrobatics fusion dance duo Majestic—who captivated Australian audiences as 2011 Australia’s Got Talent finalists—were a high-flying feature of Essentially Dance, the first of two birthday-marking showcases.

Partners Kym Stokes and Les Livesey both completed a QUT Masters in Fine Arts |Dance| in 2010 and returned this year to make QUT one of the few Australian dance schools to explore aerial dance.

Acclaimed choreographer and independent artist Lisa Wilson, who graduated from QUT in 1990, created a contemporary piece with third-year students. Ms Wilson has worked with The Australian Ballet, Opera...
Australia, Queensland Theatre Company, Queensland Ballet and Sydney Dance Company.

In a world first for any dance training institution, excerpts of the critically acclaimed Berlin were allowed to be staged by QUT for the second of the anniversary concerts, Dance 13. Alumnus and former Sydney Dance Company lead Tracey Carrodus restaged the piece created by Australian dance royalty Graeme Murphy.

Dance 13, which includes the graduating performance for final-year Bachelor of Fine Arts (Dance Performance), also features choreography by QUT alumnus Bangarra Dance Theatre’s Daniel Riley-McKinley; freelance choreographer and previous QUT staff member Graeme Collins; QUT Adjunct Professor Shaaron Boughen; QUT resident choreographer Csaba Buday; former Jersey Boys resident choreographer and QUT sessional lecturer Jason Robert; current QUT MFA(Dance) student and choreographer for Queensland Ballet Gareth Belling; and Expressions Dance Company’s artistic director Natalie Weir—also a QUT alumnus. Captivating images from the previous 35 years of dance at QUT and its predecessor institutions were also put on display.

The Creative Industries Faculty’s Head of Discipline (Dance), Associate Professor Gene Moyle, said QUT’s biannual performance seasons were designed to give dance students experience in a wide range of genres over the three-year course.


Anything but floundering

QUT creative writing graduate Romy Ash has accomplished what most young authors barely dare to dream.

Her first novel Floundering scooped the literary shortlists for 2013 including the Miles Franklin, Australia’s most prestigious award, and scored her the 2013 Sydney Morning Herald Young Novelist of the Year Award.

Ms Ash studied creative writing at QUT and then worked as a freelance writer, journalist and editor.

‘Writing a novel is a horrible thing at times because you’re alone in a room every day, not knowing if it will be published,’ Ms Ash said.

‘But it’s also a wonderful experience—I loved living within these big, big characters.’

Narrated by an 11-year-old boy, Floundering tells the tale of two brothers kidnapped by their dysfunctional mother and taken on a dusty road trip to an isolated caravan park.
Barbra Zaloumis is living proof of how philanthropy enriches not only the recipients and their families, but also society.

Thanks to QUT’s Learning Potential Fund (LPF), Ms Zaloumis graduated with a Bachelor of Creative Industries (Film), is making a documentary about leaving her abusive marriage and has formed a non-profit organisation working to transform the lives of women subjected to violence.

The LPF was established 15 years ago to provide scholarships to students suffering financial hardship. Grants of between $500 and $5000 are given to about 3000 students every year. Donations from alumni, the community, and QUT staff—around 400 of whom donate regularly through the payroll system—are matched by the university dollar-for-dollar up to $500,000 a year. The fund now sits at $26 million, and Vice-Chancellor Professor Peter Coaldrake recently announced plans to increase that figure to $50 million by 2020.

Ms Zaloumis said receiving LPF support meant she could educate herself and so achieve a better life for herself and her five children.

‘Not only did I receive financial support for my study through the LPF, they also gave us food and clothes during the hard times,’ she said. ‘They were wonderful.’

Ms Zaloumis said when she, her then-husband and children came to Australia in 2007 from Zimbabwe, she had little idea of a woman’s right to be anything other than her husband’s handmaiden.

‘I started to look around me and see that Australian women were equal partners in marriage. I started looking on the internet and finding out about women’s rights in this country,’ she said.

‘When I had to leave with the children and live in a women’s refuge, I learnt a lot about myself and gained confidence and strength.’

Ms Zaloumis said she had always had an interest in film. She approached QUT about study, so that she could gain a career and support her family.
Generosity lives on

Mary Leonard, the 102 year-old whose generosity helped QUT students realise their dreams of international study experience, passed away in Brisbane in October.

Mary and her husband Carl, who passed away two years ago, pledged almost $1 million to QUT for the creation of the Mary and Carl Leonard International Relations Award. It is designed ‘to assist educating QUT students or early career researchers who have demonstrated in-depth understanding and commitment to becoming ambassadors for real change in lesser developed countries’.

Nursing student and 2012 award recipient Laura McCosker praised the pair’s commitment to supporting education.

‘The award enabled me to volunteer in the King Edward Hospital in Durban, South Africa,’ Ms McCosker said. ‘It helped me to prepare myself with the complex, specialised set of skills and knowledge.’

Mary and Carl Leonard devoted their lives to working in developing countries, before moving in opposite QUT’s Gardens Point campus. In 2010, Mrs Leonard said she had ‘adopted’ QUT’s student population.

‘All of our friends come and talk about their grandchildren—now we have the QUT children,’ Mrs Leonard said. ‘I think learning would be the theme of our life and we just want to help these young people learn.’

Info: www.scholarships.qut.edu.au

Big effort lifts spirits

The plan was simple—pack a bus with a load of QUT alumni and students and head out to remote communities to offer a helping hand. Maybe plant some trees, paint a building or refurbish a playground.

What they didn’t expect is to return home with a priceless gem: a new perspective.

Co-founder Kassandra Buckle said alumni chapter QUT Big Lift was founded to give participants a unique real-world experience. The non-profit volunteer group is set to head off on another tour of rural and remote communities at the end of November, the third trip since the chapter was formed in 2011.

‘Seeing the potential of this project was the key motivation for me to be involved in founding this QUT chapter,’ Ms Buckle said.

‘But it is the unforgettable experiences and learning that keep me coming back.

‘There is a special magic in uniting students with communities to advocate social change and make a difference. As 2013 comes to a close, and I am just weeks off graduating—I couldn’t be more proud to be a QUT Big Lifter.’

She said the organisation would like to hear from people willing to help them to coordinate, participate in, or to promote their community projects. If you are interested in getting involved, please contact the QUT Alumni office.
Happily ever after

University is a life-changing experience. It’s where futures are made, both professionally and personally. So it’s only natural that many alumni return to QUT to celebrate other major life milestones. Dr Alix Vann and Ashley Everton chose QUT Gardens Point to be married, first staging a ceremony at the heritage-listed Old Government House and then hosting a reception in Room Three Sixty. The pair met 10 years ago at QUT, where Alix achieved a Doctorate of Clinical Psychology, and Ash completed a Bachelor and Graduate Diploma of Urban and Regional Planning. For information on hiring either venue, email events@qut.edu.au

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How to contact the alumni office:

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QUT Alumni, GPO Box 2434, Brisbane Q 4001, Australia

Winning formula

Maths, music and mentoring all played a part in helping Brody Foy win this year’s QUT Student Leader of the Year title. Brody, a straight-7s third-year mathematics honours student from the Sunshine Coast, won QUT’s most prestigious student award after impressing the judging panel with the eclectic mix of talents he uses to help unite and inspire his fellow students.

QUT Deputy Vice-Chancellor Scott Sheppard, who chairs the judging panel, said Brody had given his time to help younger students settle into university, as well as help establish two student societies for his peers. The QUT Student Leadership Awards are an initiative of QUT Alumni and Development.

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Delve further into stories, view short videos from experts and learn more about QUT research through the new tablet version. Search for QUT Links Alumni Magazine.
Australian Centre for Non-Profit Studies (ACPNS) Alumni Chapter

Established in 2002, the ACPNS Alumni Chapter now boasts a diverse group of passionate members, drawn from students and graduates of the Graduate Certificate, Graduate Diploma and Masters of Philanthropy and Nonprofit studies. What makes this chapter unique is that ACPNS students are eligible to become alumni from the first day of their studies. The chapter also embraces non-graduates of QUT who are working in the non-profit sector, inviting them to come along to chapter meetings and events to enjoy networking opportunities.

Law Alumni Chapter

Work is underway to relaunch the QUT Law Alumni Chapter. Graduates from the Schools of Law and Justice interested in helping to relaunch or to join this chapter, please contact the QUT Alumni team. Attending chapter events is a great opportunity for Law Faculty alumni to network with other professionals working in their field.

Korea Alumni Chapter

QUT Alumni welcomes the newly formed Korea QUT Alumni Chapter (KQA). The chapter is planning a range of networking and social events for the 400 alumni living in Korea and hope to engage with more with Korean students at QUT.

Brisbane Executive Club (BEC)

BEC is historically known as the alumni chapter of the QUT Graduate School of Business. However, this year the chapter widened its reach to embrace current and past students of all QUTBS Postgraduate programs. The club aims to ensure everyone benefits from the social, networking and professional development opportunities the school offers, during and beyond their study, strengthening links between QUT, post graduate Business School alumni, and the business community.

Early Childhood Alumni QUT

The Brisbane Kindergarten Teachers College Graduates and Friends has renamed itself as Early Childhood Alumni QUT (ECAQ) and aims to involve all early childhood alumni in their activities. The chapter recently celebrated the 12th annual Jean Ferguson OAM Memorial Lecture entitled Screen Time—At What Cost?, which explored the uses and impact of electronic media, such as tablets, in early childhood classrooms and home environments.

Hong Kong Alumni Chapter

The QUT Hong Kong Alumni Chapter held its Annual General Meeting in August, electing a new management committee to coordinate chapter activities for the next two years. James Ho continues in his role as chapter president, with support from eight other enthusiastic committee members. Vice-president William Lau was a guest speaker at Brisbane Marketing’s Choose Brisbane Phase 2 Launch hosted by Brisbane’s Lord Mayor Graham Quirk, held in Hong Kong in September.

Women in Engineering

QUT’s female engineering alumni chapter launched ‘The Network’ in October. The initiative’s aim is to build a supportive network of women who have graduated from the rich field of engineering courses offered at QUT. The Network talks openly about the challenges female engineers face, and makes it easier for members to work together to add value to the community. The chapter’s launch event featured Jo Kirby, named Queensland Resources Councils’ 2012 Gender Diversity Champion.

Malaysia and Indonesia Chapters

Vice-Chancellor Professor Peter Coaldrake recently hosted networking dinners in Malaysia and Indonesia, which were well attended by alumni and local education partners. The Indonesia Chapter also launched their website and presented the Vice-Chancellor with a special batik tie designed and produced locally by alumni.

Malaysia and Indonesia Chapter Jakarta Dinner (L–R): Dr Yuswanti Yuswanti, Mr Nelson Ng, Ms Vita Natasia and Ms Jessie Ayman
Keep in touch

2010s
Ryan Lu
BInfoTech 2010, UniDiplInfTech 2007
After graduation, Ryan moved back home to Hong Kong where he worked his way up from a technical support officer to a system engineer in just 13 months. His role includes installing, supporting and trouble-shooting security products for clients.
ryaniu01@hotmail.com

Liam Steger
BHlthSc 2006
Liam completed a Bachelor of Health Science (Emergency Health Services) in 2007 and is now an Advanced Care Paramedic with the Queensland Ambulance Service in Ayr. After graduation, he concentrated on further paramedic training and was subsequently appointed as the Officer in Charge of a single-officer ambulance station. Liam says this presented a variety of challenges that allowed him to develop a sense of independence, particularly in the pre-hospital care setting, and helped him to establish an affinity with the local community.
csteger@bigpond.net.au

2000s
William Pretlove
Since graduating from QUT with a combined degree of Business and Information Technology, William has worked in Queensland Government for CITEC, Corp Tech and the Department of Housing and Public Works. He has acquired skills in SAP BASIS administration, SAP and Aurion Security Administration, Oracle development, report writing and Centura or GUPA development, a rare programming language in Australia. He has been accepted into a Professional IT Doctorate at QUT, researching cloud computing.
William.Pretlove@communities.qld.gov.au

Adelyn Tey-Wee
MED(EcEd) 2005
Adelyn’s Masters in Education (Early Childhood Education), achieved in March 2005, was followed by work as an Early Childhood Lecturer at several Singapore training institutes. Then, in 2007, she decided to migrate to Australia with her husband and two children. Adelyn worked at GOWRIE Victoria—one of the leading Early Childhood institutions in Australia—for two years before launching her own consultancy.
adelyntey@gmail.com

2000s
Shruti Sain
MBusAdv 2009, MBus 2008
Shruti’s role at Tech Mahindra (TechM), India, includes assisting with the post-acquisition integration of Mahindra Satyam (MSat), a major IT company. She also handles the financial analytics and planning function for the entire company, which has a turnover of $1.5 billion, and leads a team of 17 fulltime employees.
shruti.sain@gmail.com

1990s
Colin Buchan
CertTeach 1947
After graduation, Colin worked in North Queensland before travelling to England and touring Europe while working as a supply teacher. After returning to Australia for a short time to further his education, he went to Borneo to work as an educational expert and then as an Inspector of Primary Schools. A career change saw him teaching English in Japan, where he spent the next 20 years. He has since retired to Thailand.
buchanc@truemail.co.th

1950s
Margaret Jolly
DipKTC 1950
The year after graduating from Kindergarten Training College in December, 1950, Margaret set up a kindergarten in the Brisbane suburb of Coorparoo. Two years later, she moved to New Zealand with her husband Allan, a sheep farmer, where they welcomed five children. Margaret was heavily involved in community services, becoming the first president of the Cromwell Lioness Club in 1982. Margaret transferred to the Tewantin Noosa Lions Club, Queensland, in 1999, where she received a James D Richardson Award for 25 years of service in 2007.
jollya@bigpond.com

1940s
Stuart Marsh
BE(Civ) 1992
Stuart completed a BEng(Civil) in 1992. He was recruited by a multi-disciplinary consulting firm based at his home town of the Gold Coast, where he worked on a wide variety of Australian and international projects. After gaining valuable overseas experience in Malaysia, he departed Australia for work in the UK. He is now Head of the London Structures group for renowned international AE firm Skidmore Owings and Merrill.
stuart.marsh@som.com

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Submit online at www.qut.edu.au/alumni
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or fax an update to +61 7 3138 1514
Quote the year you prefer to be listed under if you have more than one degree from QUT or a predecessor institution. QUT Links reserves the right to edit all Keep in Touch notes received.

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There can be no doubt that we live in a rapidly changing, complex and connected world, replete with both opportunities and challenges. Nowhere is this more evident than in our natural environment. The space available for life is precarious, crowded and under unprecedented pressure, and the resources we rely on for good health and prosperity are subject to enormous stresses of demand and supply.

Humanity has shown tremendous resilience and adaptability in the past, and our continued ability to manifest these traits depends on our interest and capacity to understand better the world in which we live and to develop and apply new knowledge and technology.

Universities such as QUT have the opportunity and an obligation to take a leading role in better understanding the world, through research and education which offer students the chance to develop skills that will position them well in a more knowledge-intensive future.

At QUT we have made a particular commitment to developing our work in science, technology, engineering and mathematics (STEM) by drawing together the various scientific perspectives and emphasising work that is relevant and that has a practical impact.

Our new Institute for Future Environments typifies this approach, bringing together researchers from science, engineering, law, business, education and the creative industries to collaborate on large-scale research and development projects. The Institute is in the new Science and Engineering Centre which not only houses world-class facilities for teaching and research, but also is home to The Cube which provides stunning visualisations that support academic work and is a major highlight for visitors.

Programs that can engage and inspire the public are an important complement to our academic work in STEM, and the success of the recent Robotronica event demonstrates that people are excited and eager to learn about what universities are doing in science and technology.

It is particularly important for us to inspire future generations of science students, and QUT has a comprehensive program to engage schools through campus visits and school-based initiatives as well as new approaches to STEM teaching such as the Step Up! Program, which will see specialist maths and science academics teach future teachers.

Australia’s Chief Scientist, Professor Ian Chubb, has pointed out that Australia has great strengths in STEM, but more must be done to ensure that we make the most of our potential and work alongside other nations to make the world a better place for all its inhabitants. QUT is determined to play its part in showing how this can be done.

Professor Peter Coad斟ake AO
Vice-Chancellor