Innovative Collaborations: creating positive global solutions

Hitting the ground running: industry placements

Partnering for change: commercialising research

In the lead: Professor Polly Parker
Innovative Collaborations

A team of UQ experts has joined together in a ground-breaking collaboration aimed at solving global concerns.

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Cover image: a clownfish hides in a coral reef off the coast of Selayar, Indonesia.
Welcome to the launch issue of ChangeMakers, a magazine for people who value innovation and its transformative effects on society.

Excellent research is the bedrock of many of the modern world’s great innovations, and UQ has well-earned credentials for such excellence, as signified by our consistent placement well-within the top 100 of research-focused global university rankings. However, excellence alone is not enough for a university that is serious about sharing the outcomes of top-quality research with a vast audience. Part of the task of globally-competitive universities is to clear the channels between academe and industry. When new knowledge has potential to evolve into products, services or practices that will benefit society, we should examine that potential and, if the case stacks up, work to make it real. This is done whilst we continue to champion high academic standards and principles.

Successful innovation almost always relies on partners outside academe who understand the needs of their communities and customers and have records of effective delivery. If they also share researchers’ objectives for influencing positive change, then the chemistry is more likely to be right.

And when it is, the outcomes can be sterling – as is evident in the portfolio of innovations that owe their vitality to teamwork between UQ people, external partners, and savvy advisers on research translation, commercialisation and technology transfer. The results (including those highlighted inside) illuminate how such teamwork can bolster social, economic and environmental resilience. One important step is to give young and would-be inventors and innovators access to the advice, mechanisms and encouragement that will help them spread their entrepreneurial wings. The many vehicles for this at UQ include commercialisation workshops, industry networking functions, mentoring programs, internships, and contests such as the Dow Centre for Sustainable Engineering Innovation’s Sustainability Innovation Student Challenge.

Students and young staff also have proximity to outstanding exemplars for engagement and entrepreneurship. Among them are the minds behind: the Gardasil® cervical cancer vaccine; technology used in most of the world’s magnetic resonance imaging machines; a parenting program that has reached millions of families in 25 countries; and radar technology that supports safety and productivity at mine sites in 19 countries. Moreover, having UniQuest, JKTech and lab within the UQ fold improves the chances that bright ideas with market potential can move forward. The advantages for enterprises that interact with UQ students and staff can include insights into yet-to-be-published research, and notice of best-fit future recruits. Graduates are our number 1 output, and organisations that spot them early can be seen as canny prospectors for the human resource.

Very often, relationships that start from a connection with an individual or small group grow into major projects with profound social and corporate yields. For instance: a graduate works his or her way to the top of a Fortune 500 company and remembers UQ when research and development expertise is needed; or a duo with a mighty reputation in agricultural research and extension are invited to pitch to a global foundation that has funds to fight hunger and food insecurity. Along with the people and activities profiled in this edition is a legion of others that are well worth watching. Among them are alliances with pharmaceutical companies including Johnson & Johnson, AstraZeneca and Pfizer that show strong prospects of leading to health-enhancing drugs and technologies; an agreement with a Queensland Indigenous enterprise, Myuma, surrounding efforts to turn native spinifex grass into incredibly versatile nanomaterials; and the Baosteel-Australia Joint Research and Development Centre, which is entering a new stage of maturity.

I firmly believe that the mother-lode of Australia’s untapped wealth is at institutions such as UQ, where dedicated young people can refine their impulse to innovate. Teamwork by their university and our stellar partners will help them realise their ambitions, and drive the next wave of prosperity.

Professor Peter Høj
Vice-Chancellor and President
Since we don’t know each other, let me start with an introduction. I am Robyn – since I was small I wanted to be a doctor, and I have spent most of my working life practising medicine as an oncologist. Medicine opened many doors for me, first to cancer research, then to health and academic administration, and government advisory roles. It also showed me that fear was a key driver of the widening gap in health outcomes between rich and poor.

Fear comes in many guises – the desperate, gut churning fear of facing a life-threatening illness; the irrational fear of unlikely events such as Ebola or shark attacks; the unnerving, undermining fear of “missing out” on professional recognition or financial return. Fear features prominently in the contemporary lexicon of research, both as a powerful motivator and a powerful deterrent. As institutions we fear losing researchers, the flat-lining of government funding, and research scandals. As researchers we fear the fellowship cliff, mediocre “H scores”, and being beaten to press by our competitors. Fear of irrelevancy drives ill-equipped researchers on perilous journeys through the “valley of death” between discovery and translation/implementation.

This environment of fear leads to maladaptive and costly responses that ultimately hamper our ability to address real-world challenges. The dirty footprints of fear can be seen in the creation of elaborate but ultimately artificial and unworkable research structures, and in the under-utilisation of “must have” infrastructure. Here, the driving fear is that individual or collective reward, predicated on large upfront capital investment, will be undermined by collaboration or sharing. High profile cases of research misconduct have resulted in both funders and institutions fearing public exposure or criticism, and the consequent development of complex frameworks of compliance. Important as these control measures are, their financial and productivity costs need to reflect the real risk of the activity. Too often the inexorable cycle of fear, regulation and administrative complexity can stifle creativity and spontaneity, and the consequent generation of new knowledge.

So what are possible antidotes to this fear? Firstly, recognise that knowledge creation is an inherently risky endeavour with long timeframes and low immediate returns. This means we need to support the knowledge practitioners through the inevitable failure, as well rejoice in their much-anticipated successes. The really meaningful work often happens at the interstices between disciplines, in the shadowlands between discovery and implementation. Yet these are also places of frequent failure – people who are prepared to work in these areas need support to stay there.

Secondly, recognise and reward the creation of knowledge that has value to those most in need. Thirdly, reduce fear of failure among researchers by broadening their world experience – encourage them to develop complementary skills in education or entrepreneurship. Fourthly, unhook researchers from the white line of conventional funding schemes – the cliffs are illusionary: we need a workforce with diverse gifts and skills to create a knowledge-led country.

Lastly, as the final arbitrator of risk tolerance, the community need to be engaged in the knowledge creation enterprise. If they accept that research is based on trial and error, then failure will be palatable, or even lauded as it is in the world of entrepreneurship, rather than serving as the genesis of fear.

As Pablo Picasso said, “The meaning of life is to find your gift. The purpose of life is to give it away.” Personally, I see knowledge as a gift that should be given freely – if for no other reason than as a powerful antidote to fear.
Cane toads’ own poison used in fight back

Since the cane toad’s introduction to Australia, its impact on native wildlife has been devastating.

Researchers have now discovered that using the toads’ own poison to generate bait may be key to winning the war against them. Researchers from UQ’s Institute for Molecular Bioscience (IMB) and the University of Sydney have revealed that chemicals used by adult toads to poison their predators can be regenerated in the form of bait. This bait can then be harnessed to attract cane toad tadpoles, while repelling the tadpoles of native frogs.

Seizing toads as tadpoles, before they can reproduce, is key to controlling the rapidly reproducing species – adult female toads can lay up to 30,000 eggs at one time.

During field trials, the research team tested the bait inside funnel traps in a pond and collected more than 40,000 cane toad tadpoles in less than a week. They found no juvenile toads had emerged from the pond soon after.

The researchers are now seeking an industry partner to manufacture bait and traps on a larger scale, for commercial sale and distribution to community groups.

For more information on engaging with researchers at IMB, contact Gemma Ward on +61 7 3346 2134 or at g.ward@uq.edu.au

New hope for type 2 diabetes patients

Research developed by Professor Mike McGuckin (pictured right) and his team from the Mater Research Institute-UQ (MRI-UQ) offers new hope for people living with type 2 diabetes.

MRI-UQ researchers are working on developing prototype therapies, with hopes of moving towards clinical trials in patients with diabetes.

Stress in beta cells, the team believes, is a leading cause in a person’s inability to produce enough insulin, which controls blood glucose. Type 2 diabetes is underpinned by the inability to produce sufficient insulin to control blood sugar, with this inefficiency resulting in the significant health concerns associated with the disease.

Professor McGuckin and his team have identified new stress-inducing cytokines and have determined that, by blocking these, control of blood glucose can be partially improved. This discovery will offer several new targets for potential therapies.

However, the researchers’ most significant finding is that a specific cytokine, known as IL-22, protects beta cells from stress. Additionally, when given to mice with diabetes, IL-22 completely restores control of blood sugar. The team is now working towards translating IL-22 into an effective and safe therapy for humans, and hopes this discovery will create new approaches to diabetes therapy that will ease the suffering that comes with the disease.

To find out more about the outcomes of the SCORe project, contact AWMC on +61 7 3365 4730 or at awmc@awmc.uq.edu.au

Sewer researchers resolving global concerns

The Advanced Water Management Centre (AWMC) is answering fundamental questions about in-sewer processes. With underground sewer infrastructure under threat globally due to deterioration, AWMC Director Professor Zhiguo Yuan says sewer systems are now recognised as critical assets for the public health of urban societies. In collaboration with industry partners, researchers have been working on the Sewer Corrosion and Odour Research (SCORs) project, producing ground-breaking results. The team has demonstrated that aluminium sulfate used to purify drinking water contributes significantly to corrosive sulfate levels in sewage, and two technologies for sewer management have been commercialised through UniQuest: Cloevis and Sewex.

“Maintenance costs for these sewers run into billions of dollars a year. Early outcomes of the SCORs project have already saved Australian water utilities several hundreds of millions of dollars,” says Professor Yuan. On 28 May, Professor Yuan received the Australian Academy of Technological Sciences and Engineering (ATSE) Clunies Ross Award. The team has been working on sewer odour and corrosion for more than a decade, receiving a number of national and international awards. Professor Yuan says, “The combination of world-class industry and academic engineers, microbiologists, materials scientists, analytical chemists and mathematical modellers have developed sustainable solutions to support the cost-effective management of complex sewer corrosion and odour problems. The SCORs project will have an enduring impact on the global water industry.”
Since relocating to Queensland in the early 1990s, Professor Ping Chen, Director of the Confucius Institute, has observed an increase in cultural appreciation and diversity enriching the state.

When you joined UQ in 1991, having lived in China and the US, did you notice specific strengths or weaknesses in terms of engagement with China?

When I first joined the University, I worked at the Department of Japanese and Chinese Studies (later renamed the Department of Asian Languages and Studies). I have witnessed UQ’s remarkable progress in internationalisation over the past decades, in terms of both an increase in program offerings in other languages and cultures, and in student enrolments. There has been an increase in both the number of international students coming here and UQ students studying abroad, as well as much closer and more extensive international collaboration. Take, for example, the Chinese program at UQ: the number of students hovered around 60 in the early 1990s, and has more than quadrupled since, becoming the largest Chinese program in Australia.

What are the Confucius Institute’s (CI’s) primary objectives?

CI focuses on two areas. One focus is to initiate, support and facilitate teaching and research in Chinese language and culture at the University and in the broader community, with emphasis on combining Chinese studies with education in science, engineering and technology for younger generations. The other is to assist the University in Chinese engagement, and to promote better understanding and collaboration between Australia and China.

What type of collaborations is CI engaged in?

CI offers degree courses in Chinese studies through other schools at UQ, and a variety of non-degree courses to UQ and the community. Throughout the year, CI hosts a range of events for students. Cultural events have encouraged students to gain knowledge and interact with international students. Each year, CI runs a four-week research and experience-focused tour to China for students. This has been well received since its introduction in 2010. In 2014, CI facilitated a UQ Fellowship to China program, allowing staff to undertake research and linkage opportunities with CI’s partner institution, Tianjin University. CI also contributed to the first Chinese Academy of Social Sciences (CASS)-UQ Asia-Pacific Forum, bringing international leaders in government, business, education and science to UQ to discuss themes of significance to the broader Asia-Pacific region.

In addition to community engagement, which has included cooperation with the Queensland Police and the Real Estate Institute of Queensland (REIQ), CI has been committed to building stronger relationships with schools. CI has so far set up four Confucius Classrooms at selected schools, to assist in Chinese teaching and learning. In 2014, CI – in partnership with the Queensland Curriculum and Assessment Authority (QCAA) – achieved a world first by recognising the Chinese Proficiency Test (HSK) as creditable towards the high school education certificate. This will play a key role in the Queensland school curriculum in promoting Mandarin learning.

As Director, what are your hopes for the future of CI?

Celebrating five years of operation in 2015, CI has already achieved significant milestones. We currently run around 50 programs and activities on an annual basis. Each year, CI has expanded its offerings. With China being Australia’s largest trading partner, in addition to the formalisation of a China–Australia Free Trade Agreement (ChAFTA) in late 2014, there will be an even greater emphasis placed on Sino–Australian engagement. On this basis, there will be increased demand for an understanding of language and cultural issues. Moving forward, CI strives to help the community in achieving this understanding.

Find out more

To watch a video about the Confucius Institute, visit the ChangeMakers website at uq.edu.au/changemakers

To learn more about the Confucius Institute, visit uq.edu.au/confucius
INNOVATIVE COLLABORATIONS:
creating positive global solutions

An unlikely collaboration is set to take on some of the world’s toughest challenges.

Some of the planet’s greatest minds have put decades, perhaps centuries, of collective effort into solving some of the world’s most pressing problems. Despite some excellent progress, new approaches are still needed to tackle global challenges, such as helping billions of people access energy that does not harm their health, or finding ways for coastal communities to feed their families without depleting their natural resources.

In a strategic collaboration, researchers at UQ across the behavioural sciences, engineering, business, and marine environmental management are taking a holistic approach to solving these problems. They are investigating whether a solution that has already helped millions of families around the world, the Triple P – Positive Parenting Program, can be adapted and integrated within other bodies of work looking at issues such as energy poverty and coral reef destruction. As a global pioneer of behavioural family intervention, Triple P is one of UQ’s best examples...
of translational research. It is based on a simple concept: that fostering stable foundations through positive behavioural change within the family can nurture populations of happy, healthy, and well-adjusted people. Established by Professor Matt Sanders as part of his PhD in 1980, Triple P has reached more than four million families across 25 countries. Triple P has been supported since its early days by UniQuest Limited – the University’s main commercialisation company – and more than 50,000 practitioners have now been trained to deliver the Program in 23 languages. Additionally, 591 academics from more than 150 institutions around the world have contributed to Triple P publications.

Triple P is a model of intervention that is becoming recognised by policy makers, philanthropists, and educators as not only an important idea, but also a significant strategic priority for societies worldwide. “UQ is undeniably a world leader in conducting impactful research, including the development of evidence-based systems of intervention to promote behaviour change in children, their families, and the communities in which they live. The challenge lies in taking that knowledge and applying it to some of the world’s most pressing problems,” Professor Sanders says. “Working through the family, we are seeking to overcome the obstacles currently preventing the successful deployment of reliable, affordable, and sustainable solutions for the developing world. Imagine what the implications could be if a population-based parenting and family intervention could help tackle our biggest problems, such as poverty, global food security, livelihoods, and community wellbeing,” says Professor Sanders.

As part of this new direction in research, the Triple P team is collaborating with the Global Change Institute (GCI) and the UQ Energy Initiative to examine how clean cook stoves can be deployed within India to prevent diseases caused by household air pollution.

Both collaborations are led by John Pickering, Head of Innovation and Engagement, from Professor Sanders’ group. “What’s great about these collaborations is that they’re built on the belief that the solution to these complex problems can only emerge from a multidisciplinary effort. The idea of bringing together parenting experts, behavioural scientists, chemical and civil engineers, marine biologists, agricultural scientists, economists, and innovation technology experts might be unfamiliar, but it also might be the very key to unlocking the solution,” Mr Pickering says.

The CCRES project in the Philippines and Indonesia seeks to unlock the natural wealth of coastlines in the region, in order to enhance livelihoods and food security, improve community health and wellbeing and sustain coastal ecosystems in the region.

CCRES Chief Scientist Professor Peter Mumby says, “Coral reefs, mangroves and seagrass beds provide critical services to coastal communities; however, these natural resources are under threat from human pollution, unsustainable development, overfishing and climate change.”

But often, simply educating people about the benefits of cooperation and the science behind sustainability has failed to prompt changes in the way in which these communities interact with their environment.

CCRES Senior Advisor Melanie King, who has recently undertaken research in the Philippines as part of the project’s activities, says, “You can’t solve a problem in respect to coral reefs, for example, unless you look at how and why coastal communities use oceans the way they do.”

After a recent trip to Selayar, a remote island in Indonesia, Pickering says it is clear the community desires change.

“The single strongest message that came through when we spoke with these communities is that people want the best for their children and don’t want to see them go through the same hardships they had,” Mr Pickering said. “They want their children to have better education, better health, better quality of life and they’re motivated to work with us to shape the solution.”

In India, the collaboration with the UQ Energy Initiative is looking to change the way families interact with their environment within the family home by convincing families to use clean cook stoves instead of other heat sources, which damage their health and the environment. If successful, the knowledge gained has the potential for much wider application.

The International Energy Agency estimates that 2.7 billion people lack access to clean cooking and heating technologies, a number which includes an estimated 1.3 billion people without access to electricity. Huge numbers of...
The world's population currently burn wood, animal dung, and crop residue in their homes to cook with and heat their homes. Researchers suggest this process of gathering and burning biomass causes environmental degradation, harms human health, and results in serious social deprivation – especially for women and children. More than 3.5 million deaths per year are attributed to household air pollution, most of which are linked to burning solid fuels to meet basic energy needs.

UQ Energy Initiative Director Professor Chris Greig says, “For the past two years we have recognised the transdisciplinary nature of this challenge. Our collaboration with Triple P researchers will enhance our efforts to improve air quality by exploring the use of clean energy technologies.”

He says a behaviour change program that targets a family’s motivation for using cleaner stoves could change the community’s norms for cooking technologies.

According to Mr Pickering, both these projects are an example of how government and industry support can translate research into solutions with the potential to create a prosperous and sustainable future for the developing world.

As part of this new direction of research for Triple P, Professor Sanders’ research group will be housed in the Triple P Innovation Precinct (TPIP). This new space will propel innovation by providing new and established partnerships with a place to grow in a specialised environment.

“We are working closely with experts in innovation, such as Professor Mark Dodgson from the UQ Business School, to better understand the systems and structures needed to foster a culture of innovation,” Mr Pickering says.

“As a University it is essential we provide engaging public space that enables our work to unfold in the context of participation from the community. We especially look forward to welcoming partners from industry and philanthropy to visit us on campus and to engage with us as we examine how behaviour change through families can help solve major global problems.”

To watch a video about these collaborations and view additional images of the team’s time abroad, visit the ChangeMakers website at uq.edu.au/changemakers

For more information about Triple P’s projects, call +61 7 3365 8305 or visit the Parenting and Family Support Centre website at pfsc.uq.edu.au

For more information on CCRES, visit the CCRES website at ccres.net

To learn about research conducted by the GCI visit the Institute’s website at gci.uq.edu.au

To find out more about UQ Energy, visit the UQ Energy website at uq.edu.au/energy
Having established a worldwide standing in the areas of career management, peer coaching, leadership development and human resource development, UQ Business School’s Professor Polly Parker understands the value of an effective leader.

“Great leaders have vision and a clear sense of purpose that is readily communicated to followers; the clarity is compelling,” says Professor Parker. As someone who proudly exemplifies these qualities, Professor Parker has forged a successful career in leadership and continues to research — utilising a systematic program of her own creation — in the fields of peer coaching, the intersection of career and leadership development, and intelligent career management. Professor Parker exhibits strong footing in the developmental space.

She reflects, “My work has always related to the learning and development of adults. My PhD was in careers and the underpinning for that development is ongoing learning about self, context, and authentic expression of identity.”

Professor Parker believes that peer coaching is a powerful tool that can be used by a wide range of people in terms of levels, experience and industries. “It empowers people, as it supports them to find their own workable solutions to issues and challenges that they face,” she explains.

“Another feature of peer coaching is that it can be carried out easily without need for resources or long periods of time. It is also low cost and therefore effective for application in environments or organisations without big budgets.”

Today, Professor Parker holds a position as the Professor in Leadership and Director of Education in the UQ Business School, and considers her promotion to full Professor her most significant career highlight yet.

In addition to her contributions to UQ, Professor Parker says, “I am currently working on analysing data from a large ARC Linkage grant looking at Women in Mining. I am also writing a book on peer coaching, which will integrate and extend a body of work in this relatively new field.”

In the future, Professor Parker hopes that education will evolve and adapt to meet the changing needs of learners. “We need to rethink our own mindsets to gain clarity on how we support learning for people who have access to cutting edge information, but do not take traditional paths or credentialing to demonstrate their learning. The role and value of university education will change.”

To learn more about the Business School’s MBA Program, visit the UQ Business School MBA website at business.uq.edu.au/mba, call +61 7 3346 8100, or email mba@business.uq.edu.au
For years, respected UQ researcher Professor Mandyam Srinivasan has kept his eyes on the sky, studying the navigating techniques used by insects and birds for avoiding collisions to design unmanned aerial vehicles.

Now the head of the Neuroscience of Vision and Aerial Robotics laboratory at the Queensland Brain Institute is using his vision to help promote and protect research after formally taking up a position on the Australian Academy of Science Council (AASC) in May. And it is a challenge he is excited to meet head-on.

“It is a chance for me to give back to the academy for everything they have given me,” says Professor Srinivasan.

“It also allows me to be part of a voice that can be heard by the government to promote science and also protect science from the various hazards that exist in terms of funding.”

Professor Srinivasan gained an undergraduate degree in Electrical Engineering from Bangalore University in 1968 and a masters degree in Electronics from the Indian Institute of Science in 1970. He focused his research on modelling biological systems, particularly on the way the eye moves when it tracks a moving target, and his research took him to Yale University in the US, where he completed a PhD in Engineering and Applied Science in 1977.

“When I went to the US, I was looking for someone working at the interface between biology and engineering, and it turned out that the only person I could find was someone who was studying insect eyes and it sounded like fun,” Professor Srinivasan recalls.

“In those days we didn’t really worry about what the job prospects were. We just followed our hearts.”

Professor Srinivasan moved to Australia in 1978. He gained a Doctor of Science in Neuroethology from the Australian National University in 1994, and has since built a distinguished career at UQ, where he has been based for almost eight years.

But it is his research into the navigating techniques of birds and insects – in particular bees – that has generated a lot of buzz in recent years. Studying the behaviour of bees and how their eyes and brains solve visuomotor tasks has been applied in robotics to design unmanned aerial vehicles that can safely navigate their environments.

Professor Srinivasan’s work has attracted support from Boeing Research and Technology Australia, the US Defence Advanced Research Projects Agency, the US Air Force Office of Scientific Research, the US Army Research Office and NASA, as well as the Queensland State Government and the Australian Research Council.

It is these types of opportunities for Australian researchers that Professor Srinivasan is hoping he can help protect through his role with the AASC.

“Many of my students leave to find a job overseas because there are very few career opportunities left here after they finish their PhD.

“But in a lot of developing countries they are putting a huge amount of money into science.

“They don’t question so much what the significance of the work is, but are happy to pursue basic science the way it used to be pursued – for the sake of knowledge.

“Australia has been moving away from that. We are looking for quick and immediate returns from what we invest in research and that seems like a very short-sighted policy.”

To watch a video about Professor Srinivasan’s research and his appointment to the AASC, visit uq.edu.au/changemakers
InterFinancial is an Australian corporate advisory firm that provides advice about mergers and acquisitions, capital raising, impact investment and strategic financial issues including valuations, financial restructuring and capital management, capital strategies and negotiations. Ms Doyle, who is an alumna of both UQ and Queensland University of Technology, did work experience and a clerkship with Allens Arthur Robertson that led to a law job, before making career choices and being appointed Managing Director of InterFinancial in 2009.

Joining the dots

ChangeMakers spoke to Sharon Doyle, Managing Director of leading boutique advisory house InterFinancial, and UQ alumna Sophie Monsour who completed a placement under Sharon’s guidance. In the first iteration of Two Perspectives, Doyle and Monsour talk about the value of student industry placements.

Sharon’s perspective

At InterFinancial, we invite smart, self-starting students to participate in a tailored industry placement program that complements our work as a boutique advisory house. Why? Industry placements, if coordinated to align with business goals, can nurture a competitive advantage, with students bringing young energy and creative input into the workplace. This can be particularly valuable in a smaller team. At InterFinancial, we have nine members in our senior team, including myself and an industry expert.

Collectively, we have considerable expertise, and provide advice about issues as diverse as sales and acquisitions of private companies, private equity investment, funds management and valuations to clients. We are the exclusive partner firm of Clairfield International in Australia, which is a global investment-banking firm with over 40 offices in more than 20 countries, headquartered in Europe.

With a small team backed by this broader network, we are strategically placed to provide clients with an exceptional level of service that is personal and targeted. Yet, we also have finite personnel.

The suggestions and advice shared by a student completing an industry placement can help us pursue innovation and ingenuity in ways we never imagined, and assist with offsetting the binary of resource limitations. Take Sophie Monsour, for example, who we were fortunate enough to welcome to InterFinancial for an industry placement. Ms Monsour is super smart. She showed an aptitude for grasping complex concepts, and worked diligently, exuding enthusiasm during her placement. Ms Monsour wasn’t here to mark her time, but to contribute. Her placement worked well because there was a clear connection between our intent, as an industry provider, UQ’s intent, as a higher education provider, and Ms Monsour’s intent, as a student seeking valuable experience in the finance sector. This synergy was facilitated through open dialogue and rapport, and is an essential component to getting the balance right with an investment of time.

Ms Monsour was mentored by our Executive Chairman, Paul Keehan, and tasked with completing a detailed profile on the food and agribusiness sector. Experts reviewed the content internally, and I used the profile to promote opportunities for investment in this segment to international Clairfield delegates at a specialist conference.

This is a perfect example of how industry-university partnerships can be mutually beneficial. At InterFinancial, we look for candidates who can self-manage and work independently on projects, not photocopy and get coffees. Candidates with specialist technical knowledge can offer fresh insights, such as new suggestions for how to better integrate technology, and help us stay contemporary and relevant. Establishing these relationships also helps us broaden our network of industry contacts.

Ms Monsour had an opportunity to apply what she learnt at university to the finance sector — adding direct value to our business. Since her placement, she has found an excellent graduate role (congratulations!) in a large organisation that will give her a solid grounding in the industry.

Not all placements are as successful. The calibre of candidates and employer-candidate fit are vital. So too is ensuring placements are organised through a legitimate provider, such as UQ. This way, issues such as insurance are properly managed.

Industry placements can be a fantastic experience, helping students evaluate how their aspirations fit the reality of different jobs. They provide an opportunity for employers to connect with the employees of tomorrow, today. There is also a societal benefit as we seek to sustain an economy in which young professionals are upskilled and trained to give back to society over the longer term.

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Not all placements are as successful. The calibre of candidates and employer-candidate fit are vital. So too is ensuring placements are organised through a legitimate provider, such as UQ. This way, issues such as insurance are properly managed.

Industry placements can be a fantastic experience, helping students evaluate how their aspirations fit the reality of different jobs. They provide an opportunity for employers to connect with the employees of tomorrow, today. There is also a societal benefit as we seek to sustain an economy in which young professionals are upskilled and trained to give back to society over the longer term.
Sophie Monsour was conferred with a Bachelor of Commerce and Bachelor of Laws (Honours) in July, after receiving multiple Dean’s Commendations for Academic Excellence during her studies. She is currently completing a Master of Legal Practice (Practical Legal Training) from Australian National University, and has completed summer semesters and student exchanges at Harvard University, London School of Economics and Political Science, and the Paris Institute of Political Studies. Ms Monsour was a UQ Student Leader and Peer Mentor and has volunteered for Student Services. She is conversational in French and Arabic. Ms Monsour has accepted a graduate role with Credit Suisse that begins in Sydney in February. I am relocating to Sydney for this opportunity, and will participate in training alongside other graduates from around the world in London or New York in my first year.

Looking back, I haven’t forgotten how daunting it can feel going into a workplace for the very first time, and not knowing anything about what it is like to work in a particular sector. But, if you make the effort, industry placements can be so personally enriching and rewarding.

For me, finance seems like such an exciting industry. It is always changing, and you are always working on something different. I can’t wait to start working in investment banking, and I am grateful to everyone who has helped me as I begin to make my dream a reality.

If I have any advice, it is to be organised and manage your time well as a student. Don’t ever think you are too young to complete placements, even if you are only in the first or second year of a six-year degree. It is competitive, and you need to make the most of every opportunity. Go after the impossible.

If you have any questions, feel free to contact me at careers@business.uq.edu.au. If you are interested in finding out about industry partnerships, visit uq.edu.au/giving/industry-partnerships.
We are on the cusp of a major change in the way universities and businesses work together. New forms of long-term strategic partnerships are being developed, which will focus on difficult and vexatious problems.

The benefit for businesses in such partnerships includes privileged access to ideas, knowledge, equipment and talent – access they would not otherwise possess and which gives them a commercial advantage.

The benefit to universities lies in more externally engaged win more grants and are published more often. Extensive research in the UK shows that researchers who are the most externally engaged win more grants and are published more often.

What does such a strategic partnership look like? Research is at the fore, both directly funded and in consortia. These partnerships also include education, from curricula development to internships and recruitment, consultancy and advice.

Better understanding of business among lecturers improves the employability of graduates.

At UQ, several such relationships are enjoyed with companies such as The Dow Chemical Company (Dow) and Rio Tinto.

Leading universities around the world are investing heavily in creating the spaces and facilities for strategic partnerships.

The Kendall Square initiative at Massachusetts Institute of Technology (MIT) is designed to attract innovative companies and encourage future collaborations, while The University of California’s Mission Bay campus is a magnet for bioscience companies.

Imperial College London’s new research translation campus in White City, which is going to be twice the size of its main campus, has a budget of $6 billion.

There are different challenges and opportunities for partnerships with large and small companies.

Top universities, such as UQ, should attract large multinational companies and should also support small firm start-ups and incubation. Part of the appeal of the university should be to provide a “public place” where large and small firms can interact around research and business problems.

There are a number of constraints on the development of these strategic partnerships.

First, there are a limited number of companies with the strategies and resources to engage in them and they have many good universities from which to choose around the world. So universities have to offer something distinctive that gives businesses advantages they cannot get elsewhere, and this involves concentration of research effort.

Second, providing these advantages requires superb customer-relationship management, something for which universities have not generally been noted in the past. These are relationships involving mutual commitments, and working with one particular company or university might mean not working with their competitors.

Third, university incentive systems need to encourage and reward collaboration as well as the time and effort it takes to build and maintain partnerships. Academics are often justifiably wary of being “market led” in their research. This leads to short-term, narrow and unadventurous work. By contrast, there is much to commend research that is “market facing”. This appreciates the complex and challenging problems confronting business and involves speculative and large-scale inquiry.

Forward thinking companies do not want universities to be market led, doing the work they do themselves. They want them to work together in dealing with the major problems that confront them and which their governance structures and short-term financial demands prevent from addressing directly themselves.

As well as persuading academic staff about the merits of these partnerships, universities have continuously had to build the demand for them in industry, while enhancing business’s ability to absorb the results from them.

This involves powers of advocacy and persuasion and promoting successful examples. It involves understanding the circumstances and decision-making processes of each firm and this is where a strong and well-connected business school, such as UQ’s has much to contribute.
From developing a cervical cancer vaccine and innovative magnetic resonance imaging (MRI) technologies, to delivering parenting strategies that effect change at the population level, the work of UniQuest has benefited millions of people around the world.

Partnership is a critical link between research and impact. By commercialising UQ’s vital research outcomes, UniQuest – the University’s main technology transfer and commercialisation company – has been helping disseminate solutions to global concerns for more than 30 years.

Joining forces with industry to provide companies with access to more than 7000 researchers, UniQuest is part of an integrated model of research management, industry engagement and commercialisation at UQ.

A commitment to efficient commercialisation ensures UniQuest’s sustainability, while its history of demonstrable accomplishment has established the company as one with a world-class track record.
UniQuest’s successes have included the commercialisation of:

A cervical cancer vaccine
With more than 100 million doses distributed worldwide, enhancing the wellbeing of more than 250,000 people per year, cervical cancer vaccine Gardasil™ and its co-inventor Professor Ian Frazer AC have demonstrated the impact of UQ innovations. The technology, patented by UniQuest in 1991, licensed to CSL in 1994 – subsequently licensed to Merck and launched on the market as Gardasil™ in 2006 – is now available in more than 120 countries.

Innovations in MRI technology
For more than two decades, UQ has been at the forefront of magnetic resonance imaging (MRI) innovation – with its first being an image correction technology that has been incorporated in two-thirds of all clinical MRI systems installed worldwide after 1997. The technology was licensed to both Siemens and GE Healthcare, resulting in more than eight billion patient scans worldwide.

Successful parenting strategies
The Triple P – Positive Parenting Program has been ranked by the United Nations as the number one parenting program in the world for its ability to reduce children’s behavioural problems, increase parenting skills and improve overall family wellbeing. The Program, developed by Professor Matt Sanders and delivered for more than 30 years, provides a range of parenting strategies. It is now available in 18 languages across 25 countries and an estimated seven million children have benefited from the Program.

Other accomplishments have included six service businesses, hundreds of license agreements with industry, and attracting corporate or venture capital into more than 70 start-up companies. UQ technologies licensed by UniQuest have generated more than US$10 billion in gross product sales, and start-up companies founded by UniQuest have gone on to raise more than US$515 million. In 2014, UniQuest successfully negotiated with Artesian Capital Management the establishment of a $10 million venture fund to provide early-stage capital to around 100 start-up companies as part of its management of Queensland Government’s technology incubator, ilab.

UniQuest’s offerings are organised into four channels to market: Engineering, Materials & ICT; Health; Science; and, Social Enterprise. Current examples of commercialisation from three of these channels to market include:

Engineering, Materials & ICT
An mHealth technology solution, developed by Associate Professor Udantha Abeyratne, delivers a medical diagnostic tool for respiratory diseases via a smartphone. UniQuest has licensed the technology to ResApp Diagnostics who will commercialise it further. This technology will lead to cost savings for consumers, insurers and governments through reduced consultations, shorter consultation times, the ability to use telehealth solutions, and a reduced use of antibiotics.

Science
UQ start-up company Nexgen Plants Pty Ltd is commercialising a platform technology, developed by Professor Peer Schenk, that enables virus-resistant plant varieties to be developed for major food, fibre, energy and ornamental crops. Nexgen Plants is collaborating with global company Syngenta Ltd to develop resistance in crops against three key viruses. This technology provides plant breeding companies with a range of virus resistance strategies.

Social Enterprise
Professor Nancy Pachana and Professor Gerard Byrne have developed a diagnostic tool to enable easier and more accurate screening of anxiety in older people. The Geriatric Anxiety Inventory (GAI) has been licensed to the US Department of Veterans Affairs. The GAI screening material has been translated into more than 13 languages and is available through UniQuest’s online eShop (eshop.uniquest.com.au).

To engage with UniQuest, call +61 7 3365 4037, read more about the company’s commercial outcomes at uniquest.com.au or visit linkedin.com/company/uniquest.
The benefits of Industry experience can be crucial in shaping the career development of research students around the world. By partnering with UQ, leading organisations are able to develop their own businesses by working with high-quality research students.

Dean of UQ Graduate School Professor Alastair McEwan says the Graduate School plays a key role in preparing its students as future leaders, but it is the fresh perspectives these students bring to businesses that leading organisations are looking for.

"Research students have a range of highly developed skills, particularly their analytical capabilities," says Professor McEwan.

“They bring different and creative insights to business – perspectives that businesses wouldn’t have access to normally.”

Professor McEwan says that by engaging with UQ research students, businesses and industry can create key opportunities to connect with world-leading experts, as well as gain exposure to the latest research.

“These students are well connected to academics at the University and placements provide a wonderful possibility to strengthen university-industry links,” he says.

“We’re looking to change the Australian business landscape in understanding the value of research students.

“Our value proposition is that high-achieving researchers can make a huge difference to a company.

“It may be no coincidence that the best-performing knowledge economies, such as those in Scandinavia, have a higher proportion of PhD graduates in private-sector business compared to Australia.”

Professor McEwan says the Graduate School is keen to develop partnerships globally, as well as within Queensland and Australia.

Some existing successful industry partnerships include placements through the Queensland Government, as well as with technology solutions company 3M within the Asia Pacific region.

The UQ Graduate School has also collaborated with Boeing on an innovative scholarship program that integrates students in to the organisation.

“Engineering is recognised as being a core activity at Boeing, but what is less known is they also undertake research in an area we call ‘human factors’ around flying, and its biological dimension,” says Professor McEwan.

“Physiological research at the Queensland Brain Institute, and the Schools of Psychology and Human Movement and Nutrition Sciences is highly relevant to Boeing’s activities.”

The Graduate School is also looking at opportunities within the not-for-profit sector, including organisations such as the YMCA.

“In addition to placements and work experience, we offer multi-disciplinary teamwork workshops, training in business acumen, commercialisation and other topics outside of their disciplinary expertise,” says Professor McEwan.

He says that the latest survey results indicate about 55 per cent of UQ research students are in academic positions.

“Whether they end up in an academic job or move into industry, the public sector or a non-government organisation, we believe that the high-level research skills that they have developed can make a difference.”

Find out more

To learn more about scholarship placements or the UQ Graduate School, call +61 7 3346 0003 or visit uq.edu.au/grad-school
Perfect chemistry

Wanida Phetsang has devoted most of her young adult life to the world of academia and scientific research. But after almost a decade of intense study in the fields of chemistry and biology, UQ’s PhD student was eager to transfer her skills and knowledge into the business world.

She jumped at the chance to apply for a placement with technical solutions company 3M, where she has been using her knowledge to help in the development of healthcare products at the company’s research and development centre in Bangkok.

“I was really keen to gain more experience in industry because before the placement I had only been exposed to an academic environment,” says Ms Phetsang.

“I was curious about how I could use my research skills from university and apply them to industry.”

Ms Phetsang gained her Bachelor of Chemistry degree at Thailand’s Prince of Songkla University in 2009 before going on to complete her masters degree in Organic Chemistry at Mahidol University in 2012.

A desire to combine her love of chemistry and biology led her to UQ in 2013, where she began her PhD in Medicinal Chemistry, working in the laboratories of the Institute for Molecular Bioscience (IMB).

“Students with strong research and transferrable research skills could help organisations fill gaps and strengthen their position in their industry. I would love a career where I can spend my time developing something new, something that is useful for humankind.”

“I am now better connected to people in industry and I also have a better idea about how I can apply my academic research skills to industrial research.”

But she says she also saw how research students could benefit industry with new ideas.

“Research students at UQ are exposed to multidisciplinary projects that enable students to generate ideas that are not narrowed to only one field,” says Ms Phetsang.

“Students with strong research and transferrable research skills could help organisations fill gaps and strengthen their position in their industry. I would love a career where I can spend my time developing something new, something that is useful for humankind.”

To read the full interview with PhD student Wanida Phetsang, visit the ChangeMakers website at uq.edu.au/changemakers

It’s hard to visualise the end result,” says Mr Kresevic.

“That’s how I got involved in the Boeing program. It’s at the other end of the spectrum – super applied research.”

Piloting a commercial aircraft is a cognitively demanding task, and a key skill that pilots use to maintain situation awareness is a visual inspection of flight-deck instruments, known as an instrument scan.

The use of next generation eye-tracking technology within training simulators may assist student pilots in developing effective instrument scan behaviour.

“I’ve now started working on what’s called visual crowding and I hope to develop some performance indicators for trainers to use when they’re training new pilots,” says Mr Kresevic.

Boeing and UQ have been collaborating on a number of programs and Mr Kresevic says students at UQ were the right fit for those research partnerships.

“I think that straight from the get-go, students from UQ are set up better for those research-focused careers. It’s a great opportunity to work with a big company who are at the forefront of applied research,” says Mr Kresevic.

To read the full interview with PhD student Jesse Kresevic, visit the ChangeMakers website at uq.edu.au/changemakers
The human mind is the last frontier of biology, and researchers at the Queensland Brain Institute (QBI) are seeking to unlock its mysteries.

The brain is the most complex organ in the human body, containing approximately 100 billion neurones. Brain-related disorders form more than 45 per cent of all disease cases in Australia, with the burden set to increase with an ageing population.

Developing new treatments for mental dysfunction and neurodegenerative disease, says QBI Director Professor Pankaj Sah, is the Queensland Brain Institute’s (QBI’s) “raison d’être”.

“By gaining new insights into how a healthy brain works – how we learn, remember and concentrate – we can better understand how disrupted brain function leads to disease,” he says.

“A greater grasp of these fundamental mechanisms is the key to addressing the growing problem of neurological and mental illness in our community.”

Professor Sah commenced as Director on 1 July, following Founding Director Professor Perry Bartlett FAA stepping down after 12 years. QBI forms the core of UQ’s research into neuroscience. Discoveries made in collaboration with clinicians and commercial partners provide a basis for developing new therapeutic approaches to ameliorate the effects of diseases such as dementia, schizophrenia, motor neurone disease, anxiety and depression.

The Institute has achieved remarkable success. This has been underpinned by ongoing major scientific advances in diverse research areas, ranging from the molecular guidance of axons – a process essential for correct wiring of the nervous system, to understanding the behaviour of honey bees – findings that can be used in flying unmanned vehicles. Since Professor Bartlett co-authored QBI’s first publication in the prestigious journal Nature in 2002, more than 1200 research papers have been published.

The quality of work is reflected in QBI’s National Health and Medical Research Council (NHMRC) and Australian Research Council (ARC) grant success, with over $110 million in total competitive grant funding awarded by these bodies, and $26.5 million in 2014 alone. These grants are conferred following a rigorous, competitive and open peer review, with QBI consistently achieving a success rate exceeding the national average. Excellence in brain research achieved in this field has allowed UQ to attain the highest possible score of five for neuroscience in both the 2010 and 2012 Excellence in Research for Australia reviews, which is “well above world standard”.

For general enquiries, please email qbi@uq.edu.au or call +61 7 3346 6300.
The science of learning

A partnership between QBI and the Australian Council for Educational Research (ACER) has led to the biggest cross-disciplinary education project in Australia.

Discussions between QBI and ACER in 2010 led to the realisation that both groups were custodians of significant knowledge about learning from different perspectives – neuroscience and education research.

The Science of Learning Centre (SoLC) was formed with the goal of providing a holistic approach to educational strategies, bringing together research from neuroscience, cognitive psychology and education. CEO of ACER Professor Geoff Masters says that the partnership with QBI has been mutually beneficial. “The formation of a national Centre will put Australia at the forefront of the emerging discipline of educational neuroscience,” says Professor Masters.

SoLC Director Professor Pankaj Sah at QBI says that by working together across disciplines, society will be the ultimate winner. “To maximise educational outcomes, you must understand what is happening in the brain, biologically and cognitively, and base educational strategies around that if you want to optimise learning,” says Professor Sah.

“In the past, educational policymaking and curricula have been unable to take account of our growing understanding of how the brain learns, but now we have that opportunity.” The SoLC is exploring the possibility of expanding its research program to the United Arab Emirates, with the ACER office in Dubai forming a springboard for this activity.

Building on the SoLC, the Science of Learning Research Centre (SLRC) was established in 2013 as a Special Research Initiative of the Australian Research Council. Administered by UQ, it brings together 25 leading researchers in neuroscience, education and cognitive psychology from across the country. SLRC researchers collaborate on programs to better understand learning, using innovative experimental techniques in both the laboratory and classroom.

Project Leader Professor Jürgen Götz says clinical human trials are at least two to three years away, with some challenges to overcome first. “We are doing follow-up studies in mice to address safety aspects, to consider the preventative potential of the method, and to see whether toxic protein aggregates other than amyloid beta can also be removed,” he reveals.

Professor Götz says the team is exploring translational opportunities from the research sector to further develop the treatment. An industrial collaborator is also being sought as a project partner ahead of costly clinical trials.

Contact Mikaeli Costello to learn more about the research and how you can become involved at mikaeli.costello@uq.edu.au or by calling +61 7 3346 0542.

Alzheimer’s ultrasound treatment

Researchers at QBI’s Clem Jones Centre for Ageing Dementia Research recently made the breakthrough discovery that focused ultrasound can be used to clear the brains of mice with Alzheimer’s disease.

Queensland Premier, the Honourable Annastacia Palaszczuk MP, joined the research team to announce the findings in March, during her first visit to UQ since the state election.

PhD student Gerhard Lehenga and project team leader Professor Jürgen Götz explain new findings to Queensland Premier, the Honourable Annastacia Palaszczuk MP.

Detecting the electrical activity of the brain with electroencephalography (EEG).

Contact Annita Nugent to learn more about the research and how you can become involved at a.nugent@uq.edu.au or by calling +61 7 3346 0542.
Engineering
Equitable Futures

In Australia, women account for less than 13 per cent of the practicing engineering workforce. With its strong career prospects and its abundance of varied and rewarding opportunities, why is the engineering industry still lacking female involvement?

Although few in number within the engineering industry, women have been engineers for more than nine decades in Australia. Florence Violet McKenzie, who graduated from Sydney Technical College as an electrical engineer in the early 1920s, is thought to be Australia’s first female engineer. Since then, women have been conducting significant work in the engineering industry and for more than 30 years the continued shortage in female participation has been questioned.

“There are a vast number of reasons for the statistics around the numbers of women in engineering, and each level has its own issues,” says Yassmin Abdel-Magied (Bachelor of Engineering (Honours) 2011). Ms Abdel-Magied is also the founder of Youth Without Borders, a youth-led, youth-run organisation focused on empowering young people.

Nee Nee Ong, Chair, Engineers Australia, Women in Engineering National Committee (WIENC), says that it is in part a lack of understanding of engineering and the support offered that seems to be one of the underlying reasons that numbers for women in engineering are still low.

The Australian Government Workplace Gender Equality Agency reported in December 2014 that women comprise 45.8 per cent of all employees in Australia. With women making up almost half of Australia’s working population, the low rate at which women are
pursuing engineering careers is surprising, if not cause for inquiry. Lizzie Brown (Bachelor of Environmental Engineering (Honours) 2002), CEO of Engineers Without Borders, suggests that the way the profession is presented could account for the small number of women working in engineering. “I think the way the profession has presented itself historically is focused on the technology and innovation aspect of the industry – for example, the images of the bridge, or the pipeline, or the new gadget.

“Equality in the engineering industry, whether in terms of personality types, ethnicities, or in terms of gender, needs to be talked about with regard to the changes engineering can make to peoples lives, and the human-oriented contributions the profession can make. If we present the industry in this way, we’ll see a lot more women (and men, who are interested in this aspect of the industry) entering this profession.”

Echoing Ms Brown’s thoughts, Ms Abdel-Magied says, “The issue of unconscious bias across the board is pervasive. We need to encourage the women and girls around us and then support them through the process, and work with men so they also understand the landscape may be changing slightly but it is changing for the better. So it should be treated as an opportunity, rather than a threat.”

The culturally constructed perception of engineering as a “men’s profession” is an international concern that is being addressed in a number of ways by successful female engineers, businesses, education institutions and industry.

The reasons to inspire more women to pursue a career in engineering are many. For women, the wages are high, there is increased job security and the opportunities to make a positive difference in the world are plenty. WIENC has created a Gender Diversity Award, conducts regular industry studies to investigate the status of women in engineering and in November 2014 launched EngTalk, a program that works alongside primary and secondary schools in each state of Australia – with an aim to educate and excite students, teachers and parents about the engineering industry.

But WIENC Chair Ong says there is “still much good work to be done”. She notes, “We are here to help break barriers and further the progress our first women have achieved over the years. Engineering is exciting, fulfilling and more importantly it is crucial for the sustainability of our society, communities and way of life.”

With the support of industry partners Rio Tinto, the Australian Power Institute (API), and the Australian Petroleum Production and Exploration Association (APPEA), UQ’s Women in Engineering program is also aiming to inspire the next generation of female engineers. The program is based around the belief that gender diversity in engineering will benefit society through improved, technically grounded problem solving.

UQ Faculty of Engineering, Architecture and Information Technology (EAIT) Associate Dean (Academic) Professor Caroline Crosthwaite
As a teenager and fledgling scientist, Professor Possingham received a Princeton University monograph from his father. The gift merged ecology together with mathematics, and from that moment, the then 16-year-old was hooked on both. “Once I combined this work (ecology and mathematics) with my interest in saving species and ecosystems, my passions were satisfied,” he remembers.

Now an Australian Research Council (ARC) Australian Laureate Fellow, who directs two national research centres, Professor Possingham’s work concerns decision theory in conservation biology. “As Director of an ARC Centre of Excellence in Environmental Decisions and a National Environmental Science Program hub for threatened species recovery, I have the privilege of seeing a broad range of research projects that are at the forefront of conservation research globally. We are fortunate that in this field, Australia is considered the global leader,” he says.

Professor Possingham’s research interests are diverse, and span from helping recover individual species to building systems of marine-protected areas across the globe. One of his more specific goals is to create a macro-economics of conservation decisions, in an endeavour to resolve fundamental conservation questions. One of these questions is: “Is it better to preserve existing habitats, or restore habitats in regraded areas?”

Professor Possingham tells ChangeMakers, “My passion to conserve as much of the world’s precious biodiversity is what drove and still drives me to work in the area of conservation research. Conservation research is a mix of many disciplines – ecology, mathematics, economics, psychology etcetera. It is a diverse, multidisciplinary career and, hence, lots of fun.”

The field of conservation research is new and changing rapidly, according to Professor Possingham. When he completed his PhD at the University of Oxford in 1987, only a handful of conservation research scientific journals were published. Today, around 40 exist. The field, he explains, has shifted from a singular focus on ecology to draw on many disciplines. Professor Possingham believes conservation research will continue to grow as human concerns about the loss of species and the natural world intensify.

“arising from the growing number of middle class people in China, Brazil and India means that global interest in nature conservation is accelerating. We need to move on from a very ecological focus to a broader focus in our research, embracing more quantitative tools, economics and the social sciences,” he explains.

In the past, funding for conservation research has largely come from governments, but Professor Possingham suggests this will not last. He reveals, “The non-government environmental sector and philanthropists now need to step up, as they have in the US. This is an opportunity to invest in research that is leading the world.”

To learn more about Professor Possingham’s conservation research, call +61 7 3365 9766.
From a childhood watching her dad care for injured wildlife, Zoë Black has pursued a career where helping the vulnerable comes first.

Black and white puppies bound by mischievously as ChangeMakers speaks to Ms Black (Master of Business Administration 2011, Bachelor of Communication 2005). She is engaged yet watchful, fostering the two adorable Staffordshire terrier crosses (pictured) before they are old enough to be adopted through the RSPCA.

It is here that Ms Black has accepted a full-time role in Business Partnerships, generating new areas of support and fundraising.

“I have a really strong value around protecting the vulnerable, both people and animals,” she reflects.

Earlier this year, Ms Black helped organise the RSPCA’s first major Pop Up Adoption with the Brisbane Convention and Exhibition Centre. More than 10,000 people attended the inaugural event, setting a new record.

“It was an overwhelming success, with rescue animals transported from all over Queensland and 275 adoptions in one day,” she says.

There are broader opportunities for collaboration as well. *“Corporations are engaged to donate space and equipment, and to take part in major fundraising events such as the Million Paws Walk and Cupcake Day,”* she says.

Establishing and sustaining financial partnerships is an essential aspect of Ms Black’s work, with 99 per cent of the RSPCA’s work funded through the community.

Research shows that people who remain socially engaged have much higher levels of wellbeing and life expectancy,” she says.

“The groups already engaging in these experiences include the elderly, people with mental and/or physical disabilities and women taking temporary shelter in safe hostels.”

The Foundation has recently received a grant from the Suncorp Brighter Futures Program. UQ students are volunteering their time to help out, with Ms Black remaining connected to her alma mater both through the program and appointment on the Young Alumni Advisory Board.

A desire to “interact with different parts of business, and absorb it all” compelled Ms Black to pursue postgraduate studies.

“To enquire about UQ’s MBA program, call the UQ Business School on +61 7 3346 8100 or email mba@business.uq.edu.au. If you are interested in partnership opportunities with the RSPCA, call Ms Black on +61 7 3426 9973 or email zblack@rspcaqld.org.au.
University of California, San Francisco (UCSF) Chancellor and UQ alumnus Professor Sam Hawgood believes dialogue is integral to universities successfully engaging with industry.

“Universities must open their doors to industry, and industry must open their doors to academia,” says Professor Hawgood, who graduated in 1975 with a Bachelor of Medicine/Bachelor of Surgery (First Class Honours) and was awarded an honorary doctorate in 2012.

“This is the only way discoveries will be made more aptly and cost-effectively with medicine, devices and other applications to benefit humankind.”

Professor Hawgood joined UCSF as a Research Fellow in 1982, and led the University’s School of Medicine to be ranked second in the world in clinical medicine and pharmacy by the Academic Ranking of World Universities in 2013. UCSF has exciting partnerships with industry under way, such as work with Google to create an online platform to enable health workers to predict where malaria is likely to be transmitted internationally. Another collaboration is the Genomic Medicine Initiative’s partnership with Synapse and DNAnexus, which reflects a novel integration of next-generation genomic profiling with cancer care.

Professor Hawgood was raised on the Redcliffe Peninsula, and met his wife, Jane, when she was paired as his mentor at UQ’s International House. While Professor Hawgood is renowned for his work in neonatology research, as well as a clinician, teacher, mentor and leader, he personally credits Jane as a “great help” in his career. After graduating with a Bachelor of Social Work (1975), she has specialised in adult palliative care, imparting “experience and wisdom in managing people in difficult parts of their lives.”
“She has an amazing way of connecting with people, regardless of their status in life or their background,” says Professor Hawgood.

This focus on connection is important as he “tackles big problems, even if they seem high risk” and provides a “clear message of what we are trying to achieve” in overseeing the $4 billion UCSF enterprise in California.

In relative terms, UQ, as his alma mater, also performs highly in international rankings, alongside other leading Australian universities. Currently, UQ is ranked well inside the top 100 globally in key rankings, with the Triple P – Positive Parenting Program and Gardasil™ pillars of international success. Australia is also the world’s third leading destination for foreign tertiary students, after the US and UK. Statistics about industry collaboration, however, reveal a telling gap, with the US, UK and many other countries — 20 to be exact — outranking Australia in terms of business and university collaboration on research and development. In the World Economic Forum’s Global Competitiveness Index 2014–15, Australia ranked 21st for this metric, with Finland (1st), the US (2nd), Switzerland (3rd), the UK (4th) and Singapore (5th) joining countries including Qatar, Luxembourg, Israel, Malaysia, Ireland and New Zealand in performing better.

There is a sense of urgency underpinning calls to enhance engagement between the higher education sector and industry nationally. Commentators such as the Business Council of Australia’s Chief Executive, Jennifer Westacott, for example, have stressed how “research and innovation are central to the nation’s prosperity” and educational institutions and industries should be “joined at the hip” in pursuing new forms of value.

In launching Changemakers, UQ seeks to strengthen existing partnerships, and welcome new partners as it pursues knowledge leadership for a better world. In turn, partners across all industries can align with an institution with more specialised fields of research at world standard or above than any other Australian university.

As a self-described global citizen and sector commentator, Professor Hawgood advocates considered consultation and engagement between universities and industry that reflects emerging trends.

“I believe we are at a critical inflection point in life sciences healthcare and education here in the US, and to a lesser extent, around the world,” he shares.

“Part of this is the changing relationship between universities and the broader community. We need to make the boundaries more porous and explore different models, while maintaining high ethical standards.” He contends the comparative size of Australia allows for a “certain unity of purpose and focus on emerging trends” that is advantageous, with credibility and deep respect “for the quality of Australian universities”.

“There are the same kind of opportunities and challenges in all developed countries,” he says.

“Australian universities, like universities in North America and around Europe, are in a great position to lead the world.”

Information about existing UQ industry partnerships is available at uq.edu.au/giving/industry-partnerships. If you or your organisation would like to support research at UQ, please contact Ian Harris at director.partnerships@research.uq.edu.au or phone +61 7 3365 3559.

On his studies

“I arrived at UQ as a 17-year-old, and enjoyed the breadth of experiences in front of me, the incredible spirit of the place, the sense that opportunities were limitless and exposure to a broad range of thinking.

“My time studying taught me a way to acquire knowledge, and to understand that education gives you the tools to make learning a lifelong commitment. Having the benefit of hindsight, the quality of my education was superb.

“A highlight was studying human anatomy, and getting the chance to understand the complexities, intricacies and beauty of the human body.”

On the role of universities

“Universities are a crucible for intellectual, emotional and professional development. They have a critical role in producing students for a global economy, who should be thinking about issues of equality, diversity and integrity, in addition to specific intellectual content.

“Students bring tremendous value to universities. There is a feeling anything is possible, and they are a renewable source of incredible enthusiasm. They are also currently driving big new ideas coming out of laboratories.

“At a time when financial resources are tight, it is particularly critical we produce this excitement, and continue to create environments at universities that lead to an atmosphere of limitless opportunity and potential.”


2 In 2014, UQ was ranked 85th in the Academic Ranking of World Universities, 65th in the Times Higher Education World University Rankings, 68th in the US News University Ranking, 69th in the Performance Ranking of Scientific Papers for World Universities and 97th in the QS World’s Best Global Universities Ranking.


4 As above.

5 These Australian universities, including UQ featured in the QS World University Rankings top 50 for 2014, with UQ ranking inside the top 50. For more information, visit topuniversities.com.
We were challenged to think about who we are and what impact we wanted to have long term

Zachary and Mikayla, UQ students

With the support of a passionate lecturer, Zachary and Mikayla turned a university project into a business. While studying at UQ, the pair of social entrepreneurs started The Tippy Toe Co., a ballet school for children with special needs. By learning to see the world differently, Zachary and Mikayla created change. See their story at uq.edu.au/createchange