THE POWER OF TOUCH
How we connect with the world around us

RE-THINKING RESEARCH
Using design thinking to solve real-world problems

THE NEW OPINION MAKERS
Academics, impact and the new media
EXECUTIVE COLUMN

DEFINING RESEARCH

It’s hard to imagine a greater contrast between the focus of last year’s Research exhibition, Inquiring Minds. Inspiring Solutions, and this year’s: Touch Too. We’ve moved from a focus on research in health and sustainability to exploring how touch can shape technology, interaction and emotional connection.

This sums up the diversity and complexity of research here at UTS; the breadth and potential of our impact, but also the difficulty of comparing research outcomes.

The recent Excellence in Research for Australia (ERA) initiative – which benchmarks the quality of Australian research against world standards – has tried to measure these outcomes, but it’s difficult.

I am proud of the fact that we were benchmarked world standard or above in approximately 80 per cent of our research, ranking us 13th of the 41 Australian universities. Clearly this is an impressive achievement for a university that is not yet 25 years old.

However, at UTS our research isn’t just driven by rankings, it’s driven by a desire to produce research that has impact; research that has real benefits for society, industry and environment. This is a critical measure of relevance that is not measured in ERA.

The scope of our research is reflected in our six research themes: Sustainability and the Built Environment; Health Futures; Future Services and Industries; Communication and Intelligent Systems; Business Innovation; and Creative and Civil Societies.

These themes ensure our research is tackling areas of critical national and international importance. What is unique about research at UTS is that it’s underpinned by technology and creativity.

This year’s exhibition and this edition of U: magazine capture this diversity. In all of these articles, there is a common thread. From cardiovascular research that can save lives, to using coral to rebuild bones, to the exhibition itself – impact is apparent.

Likewise, this year’s exhibition shows how art, design, music (in other words creativity) and technology combine to influence our perception of touch and connection with the world and each other. As technologies develop, and our reliance upon them increases, it influences our outlook on society and how we interact.

Touch Too falls into the research happening within our Creative and Civil Societies theme – which undoubtedly produces the broadest, and perhaps some of the hardest-to-define, research outcomes. By bringing together the arts and social sciences, design, business and the sciences it gives a unique and holistic perspective on society, cultural change and the creative industries.

I look forward to continuing to work together to generate new and exciting research discoveries that deliver real impact across all areas of society.

Professor Attila Brungs
Deputy Vice-Chancellor (Research)
Photographer: Joanne Saad

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Professor Attila Brungs
The University of Technology, Sydney aims to be a leader in collaborative research and a preferred research partner for industry, business, government and the professions.

We are committed to supporting our researchers, research students and industry partners. We achieve this through our multi-institution collaborations and the services we offer.
Researcher development activities are under the spotlight, thanks to a new initiative that will increase the range of professional development opportunities on offer to UTS’s research community.

The Researcher Capability Development Initiative (RCDI) will consolidate and expand the development tools that already exist across UTS and make them accessible and searchable for research staff and students.

"Given the increasing importance of the development of research attributes, capabilities and skills, this initiative comes at a critical time," says Dean of the University Graduate School (UGS) Professor Nicky Solomon.

“One of the issues that came out of the early stages of building the RCDI was the fact that it was really hard for students and academics to find what was actually available in terms of researcher development activities and to mix with other researchers across the faculties. They said it was useful yet often difficult to talk to different people and develop a broader understanding of what else was going on.

“There was a need to package the RCDI in some way to allow individuals and groups to access it more easily.”

Existing development activities include research-specific modules on topics like referencing, grant writing, thesis writing and effective use of social media RSS feeds and online tools.

Under the new RCDI, these activities will be expanded and will live in a centralised online repository. They will be offered as a combination of e-learning modules, face-to-face workshops and a collection of summer and winter school sessions.

The ongoing development of the project is a collaboration between UGS, the Research and Innovation Office, Institute for Interactive Media and Learning, ELSA Centre, UTS:Library, Human Resources Unit (HRU) and the Mathematics Study Centre.

“UGS will lead it in partnership with all the relevant units,” says Solomon.

“No matter how brilliant the program, unless the processes within faculties and research strength centres allow for its uptake, it won’t happen.”

Many of the workshops will be run out of the library, which is already home to a range of innovative development opportunities.

Director of the Education and Research Services Unit Mal Booth says the library will offer a range of support options as the RCDI is rolled out. These include effective use of online tools, bigger and better Research Week activities and individual researcher consultations.

“We’re very keen on offering personalised and customised assistance for researchers,” says Booth.

“We also offer assistance with data management planning, copyright and intellectual property advice, and we curate the university’s research output, making it available online to the world wherever copyright permits.”

Researchers will also have the opportunity to access a series of modules through HRU.

Manager of HRU’s Organisation and People Development Dr Gloria Blondé says researchers can benefit not just from research-specific learning, but also from skills that will help them function effectively in an organisational context.

“These include goal setting, objective setting and being able to report against those goals; and communication skills, team skills, interpersonal skills and the ability to network effectively.”

A successful RCDI is a long-term goal for UTS; it will be rolled out slowly, with ongoing consultation and modification to ensure it meets researcher needs in a meaningful way.

“In building UTS’s reputation as a leading research university, we have to ensure our researchers are supported not just to succeed, but to excel,” says Solomon.

“Essentially it’s professional development for researchers – it’s for now, but it’s also for the future; it needs to build people’s trajectories and career paths.”

Claire Thompson
Research and Innovation Office
Photographer: Joanne Saad
Comment on this article at newsroom.uts.edu.au/news/2011/07/Researcher-boost
“Every 15-minute delay increases a patient’s mortality rate by one per cent,” says McKinley. “So it’s actually quite crucial for people to get to hospital within an hour of their symptoms starting.

“If you can unblock the blockage and restore blood supply to the heart within an hour, you can greatly reduce the damage to the muscle. And in turn, that reduces short-term complications, it improves survival, it reduces further heart failure and abnormal heart rhythms that can kill people.”

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McKinley says the key to action is awareness.

“Izanda Ford
Marketing and Communication Unit
Photographer: Joanne Saad
Comment on this article at newsroom.uts.edu.au/news/2011/07/on-the-attack

“In Australia, there are approximately 130 heart attacks a day; almost half are fatal.

McKinley, along with research colleagues from Australia, the United States and New Zealand, recently published a study of 140 Australian and New Zealand patients in the Emergency Medicine Australasia journal. Their work revealed people are taking too long to act on cardiac arrest symptoms.

“People are arriving at hospital too late to receive maximum benefit from treatment,” she says.

The research found around 50 per cent people delayed two-and-a-half hours from onset of symptoms to presentation at hospital.

“We’re currently doing an amazing project with South Eastern Sydney and Illawarra Area Health Service where we’ve partnered with multicultural healthcare workers to run a targeted program about cardiovascular disease.

“We’re using key Heart Foundation messages about ‘knowing your numbers’ – blood pressure, cholesterol and waist circumference – and the importance of dialling 000 if you have a heart attack. We’re also taking them to women, who, for a whole host of reasons – including culture, language and gender – don’t access the mainstream healthcare system.”

Davidson says the CCCC is laying the groundwork for improvements to future health outcomes. “It’s very important to take a life-course approach to chronic disease. Many of the foundations of health and wellbeing are set before a baby’s conceived. We can’t address these complex problems unless we deal with the whole life trajectory.”

And for McKinley, having a centre like the CCCC, which transform research data into community projects with tangible benefits, is encouraging. “People relate to the risk of a heart attack, yet coronary artery disease continues to be a major cause of death and disability in the developed world. It’s time to do something about it.”
THE NEW OPINION MAKERS
Shorter deadlines and fewer staff are pushing traditional news outlets to publish increasingly superficial stories. Andrew Jaspan, Editor of the new media channel The Conversation, explains how academia is filling the void and providing the public with context and understanding about the issues affecting us all.

The media is in a state of crisis. Declining revenues are dragging down the quality and integrity of content on our TV, on radio and in newspapers. They're vital for an informed democracy, but as jobs in newsrooms are cut, coverage is increasingly superficial and reliant on wire copy, press releases and celebrity gossip. The vacuum in the public debate is stark; people are hungry for information they can trust.

Journalists are very good at locating and highlighting problems. Yet they fall down when it comes to producing solutions. And rightly so; that isn't their primary role.

The journalist is usually a jack-of-all-trades and master of none. He or she needs to be adaptable, ready to be sent to any story and come back with the basic facts. For deeper analysis and the development of ideas that can take matters forward, experts are required.

Where do we find them? In universities and research institutes. Here are the people with the knowledge, and crucially, the inclination and ability to look forward and develop proposals and solutions. Here lie the answers to society's most complex problems.

As public servants, academics have a duty to transfer knowledge and use their expertise to improve public policy and debate. It’s all very well working for years on a crucial medical breakthrough, or crunching the numbers to find out how big the Australian population can be before we reach breaking point, but if no-one (bar a few academic colleagues) reads about the research, that vital contribution is lost.

For too long the academic and media worlds have been at odds. Journalists are increasingly forced to be superficial and keen to put a sexy headline on their story to drive circulation and hits, while academics can spend years in their ivory tower drowning under a sea of books, disconnected from the real world.

Those clichés should be long gone; the two worlds have collided. Just as the media is pushing the boundaries of technology and bringing news from parts of the world that simply couldn’t be reached before, academics are increasingly engaging with the commercial world, policy makers and the public.

There are more opportunities now for academics to influence public debate. Television and radio stations are multiplying while the internet is ideal for people to disseminate and engage with information.

But people don’t want just any old information. In fact, most report feeling overwhelmed by the amount of information available to them. The public want timely facts delivered in a fashion they can absorb and most of all, especially in an era of Photoshop and blogging, information that they can trust.

This is the holy grail of the new ‘over-information age’.

We need the deeply informed knowledge gathered and nurtured by people of strong expertise in their given field. The key is to make it easier not only for those academic experts to pass on their knowledge, but for the interested wider public to access it.

That’s why we launched The Conversation. We believe the higher education sector’s contribution to public debate is vital. And forward-thinking universities like UTS, which is a founding partner of The Conversation, are committed to improving the public debate.

Yet sometimes universities and individual academics need help to communicate the often-dazzling work they do. There is so much valuable work going on within the walls of these institutions that even the best-resourced public relations department could only hope to scratch the surface. We want to work with them to help get that essential information out to the public.

Our professional journalists and editors work alongside the academic authors to help them translate their in-depth knowledge to the public, because just as journalists shouldn’t be doing the job of experts, it’s not the role of the academic to do the job of the professional media editor.

Since we launched in March, we’ve been overwhelmed by positive feedback from the academic community as well as those informed members of the public who feel they’ve been abandoned by the traditional media.

People are interested in research and the findings, but they are also interested in the expertise those researchers have. As ‘subject-matter specialists’, academics are also, with our help, able to respond quickly and with real knowledge on live news. So when a major world event takes place – like the killing of Osama bin Laden – the public naturally want to know what happened, and more importantly what it means, from somebody who knows what they’re talking about.

Academics are all too often shy about their work. Some think their research isn’t worthy of a spot on the news, some worry promoting their research is egotistical and others are, rightly, simply too busy. With the pressure of grant applications, teaching, administration and bureaucracy weighing down, I can’t blame them.

But academics can make a difference. They can change the course of public debate by providing the proper context and understanding to a subject.

To academics we say: whenever you hear a politician making an ill-informed remark, jump on it. When you see a product promising to change someone’s life, when all it’s going to do is relieve them of their hard-earned cash, act on it. Use your skills and expertise to fill that gap between the public and the decision makers. Your research can make a real impact for the good of the community.

Andrew Jaspan
Editor, The Conversation
theconversation.edu.au

Photograph supplied by: Andrew Jaspan
Comment on this article at
newsroom.uts.edu.au/2011/07/the-news-opinion-makers
A concept known as design thinking has the potential to change the face of teaching and research at UTS. Already, the concept, which is gaining traction in a number of faculties, is being used by students to uncover new solutions to real-world problems.

Made famous in institutions such as the Stanford University d.school and the University of Toronto’s Rotman School of Management, design thinking is a creative and human-centred approach to problem solving. It calls on people from diverse professional backgrounds to apply their expertise in an innovative way to tackle real-world issues.

“The principles around design thinking are that it’s grounded in real-world problems and based on the premise that these problems can’t be solved by one perspective or by a single disciplinary approach,” says Dr Julie Jupp, Senior Lecturer in the Faculty of Design, Architecture and Building’s (DAB) School of the Built Environment.

“Essentially it’s an approach to problem solving. Design thinking has been formalised at the Stanford d.school into a method, or really a tool belt – it’s a process students, industry and researchers alike can follow that leads toward innovation, creativity and entrepreneurial activity.

“Design thinking aims to provide solutions that are human-centred; design that’s integrated, that’s interdisciplinary and biased towards action.”

Jupp is one of five UTS academics who recently returned from a sojourn at the d.school, one of the world’s most celebrated design-thinking institutes and famed for its unconventional approach.

She and colleagues Dr Nathan Kirchner and Dr Wayne Brookes from the Faculty of Engineering and Information Technology, Dr Jochen Schweitzer from the UTS Business School, and Dr Joanne Jakovich from the Faculty of Design, Architecture and Building, spent between three and 10 weeks each in the United States attending d.school classes and starting to brainstorm on how design thinking might be applied to UTS teaching and research programs.

They encountered a range of innovative approaches. Business, science, design, humanities, medicine, law and education students came together to take classes like Creative Gym – where experiential activities focus on movement and physical activity to connect mind and body – or Design for Sustainable Abundance – where students tackle a range of sustainability problems in areas like food and transport. Many of the classes are taught by industry figures, or have an obvious industry bent in the way they are constructed.

"From a research perspective – in terms of engaging with industry and enabling research to be use-inspired and more industry relevant, and having research partners who are actively collaborating with academics and students on research projects – design thinking holds some great practices and good principles," says Jupp.

The idea to bring design thinking to UTS evolved in parallel in both DAB and the UTS Business School.

Professor Kees Dorst, Associate Dean (Research) at DAB and an international leader in design innovation, believes an obvious gap exists in applying design thinking to academic research. "What I’m trying to do is develop a design-thinking identity around UTS."
“Businesses are running out of their old paradigm – they need new ways to engage with the world.”

“Design thinking, in a business context, is essentially about looking at different ways of running businesses, of developing new products and processes, of running organisations, of visualising what markets will look like in five or 10 years, and enabling customers to visualise companies and their products in a different way.”

Dorst says, “It’s good to influence the staff and make them aware of the design-thinking paradigm and have that embodied in different ways in different faculties, and see whether it grows or not in those faculties.”

Just how design thinking might find a home for itself at UTS is still in discussion. “We’re at the point of getting things together and trying to create enthusiasm and a critical mass for things to start happening,” says Dorst.

“I think we do need to develop a facility, but whether that’s a hub-type lab or a d.school style of lab is still up for debate. There are many different types of labs around the world now and none of them are quite right for us.”

“UTS is home to one of the biggest design schools in the world. And being an ambitious place, and a dynamic place, we need to build something that will exploit those qualities and be responsive to them – a facility that is really unique to UTS.”

Dean of the UTS Business School Professor Roy Green says design thinking encompasses the graduate attributes he’d like to create in his students. He also sees the school’s research direction taking the same path.

“With the research talent across these faculties, we can take the lessons we’ve learned from the Stanford d.school and use them to develop the next generation of design thinking – integrating innovative teaching and learning practices, solid research and an exciting new kind of industry engagement.”

Design thinking activities already exist in pockets around UTS. A research project currently being conducted by the Designing Out Crime Research Centre aims to rejuvenate the neighbourhoods and community spaces of Mount Druitt.

In this project, designers and social workers will come together to examine a range of physical, environmental, social and community issues, such as public transport and public safety, within a design framework. They’ll examine these issues both in the context of their own expertise and in the context of the group’s collective expertise.

“This project is an inspiring Australian example of design thinking in action,” says Jupp.

“The researchers are gathering information, understanding the problem, looking at the different user perspectives and trying to understand and engage with the user using ethnographic methods to place themselves in the user’s context, in the user’s environment.”

The aim is to transform these pockets of design thinking into a university-wide model so the concept can reach, and benefit, a range of faculties and research areas.

Claire Thompson
Research and Innovation Office
Photographer: Joanne Saad

Comment on this article at newsroom.uts.edu.au/2011/07/rethinking-research

“DESIGN THINKING AIDS TO PROVIDE SOLUTIONS THAT ARE HUMAN-CENTRED; DESIGN THAT’S INTEGRATED, THAT’S INTERDISCIPLINARY AND BIASED TOWARDS ACTION.”
For many, the sense of touch is purely physical. Not for Professor Anne Cranney-Francis.
The Director of the Transforming Cultures Research Centre, and self-confessed sci-fi buff, argues touch enables a powerful connection between humans and the environment and is one of the most important processes we use to validate our knowledge and understanding of the world.

Five years ago, Cranney-Francis received an Australian Research Council grant to explore the meaning of touch. Her research initially focused on haptics, or touch-based technologies, which include the touchpad on a smartphone and processes like virtual surgery – where doctors practice surgical procedures without the need for an actual patient, instead using gloves or tools that allow them to physically feel the difference in the simulated organs or tissues.

In mid-2006, Cranney-Francis became intrigued by the emergence of smart-fabric technologies. She particularly wanted to understand how such developments would change the way humans perceive touch.

“Smart fabrics work by touching you as opposed to you touching it. For example, you could be wearing a dress embedded with technology which reacts to touch by giving you a hug. In a world where this level of technology is becoming common, I firstly wanted to know what ‘touch’ meant, and secondly, whether this meaning changed over time.”

Cranney-Francis has also investigated how art makes use of the sense of touch and how humans use this to experience art. She explains the double connotation with touch – not only do we reach out and touch but we receive the touch back from the object or person we’re touching.

“I wanted to understand why people feel the need to touch the art they were looking at. I believe we do it to validate what we see and to create a connection with the work. This is why museums are trying to incorporate hands-on galleries – when a person touches an object they feel a connection that is far more intimate and engaging than just looking at it in a glass cabinet.”

To further explore her theories, in 2009, Cranney-Francis curated an exhibition titled The Sense of Touch, which explored the significance of touch in both technology and art. Until 29 July, UTS will be hosting the second iteration of the exhibition – Touch Too. The academic’s latest installation includes new works from the permanent UTS Art Collection and explores the intimate relationship between touching, knowing and being.

Touch Too uses various mediums – like sound, painting, film and design – to further investigate the sense and meaning of touch. Cranney-Francis hopes the exhibition inspires people to start thinking of touch as not just a physical capability, but something that tells us about ourselves as human beings.
“The relationship between the senses, how they reinforce each other or translate from one sensory experience into another, is just fascinating,” says Cranny-Francis. In Touch Too, Amanda Robins’ paintings are incredibly sensual – she manages to create a sense of tactility, visually.

“I’ve also included Steel Cello/Bow Chime by David Chapman and Adrian Palka in the exhibition as I want people to think of sound as a multi-sensory experience that includes touch. We only hear because the small bones in our ears vibrate and touch each other.”

Filmmaker and Director of the Sydney Underground Film Festival Stefan Popescu is delighted to be exhibiting two multimedia works in Touch Too. Both Repressions and Broken LCDs are examples of art which have been manipulated by Popescu.

He says there is a real juxtaposition of meaning in the works – touch can be both physical and ethereal or sensual and brutal at the same time.

“With Repressions, I physically affected the films by burning and scratching the films then captured the resulting effect digitally. The idea for Broken LCDs came when someone accidentally sat on my laptop – the resulting image on the broken screen was just exquisite. All these LCDs have a story about how they were broken; several had been knocked over; one was hit by a basketball and one has slightly darker undertones – it was broken during a domestic violence situation and there is a very subtle reference to that in the film on that particular screen.”

Popescu has observed how people, especially women, are drawn to touch Broken LCDs, and in doing so have created more cracks on the screens. That connection between art and the individual is crucial for both Popescu ‘the artist’ and Popescu ‘the human’.

“Touch Too embodies a lot of what I researched for my own work. It seems to me that we as humans are empathising less and I think people focus on the sense of touch less than they used to. I know people see very different things in my work – if I’m really honest with myself I think I’ve learnt the most about my own work by observing others engaging with it and being touched by it.”

Other works in the exhibition include wearable technology such as Twenty121’s Fauxy the Fake Fur With Feelings; Meredith Brice’s Embedded – a display of recycled materials which explore the manipulation of texture – and Munkki, a traditional Finnish rug designed by Uhra-Beata Simberg-Ehrstrom, from the permanent UTS Art Collection.

Unlike some sci-fi buffs, Cranny-Francis isn’t too concerned about the development of touch-based technologies; she doubts they will have a negative effect on society or that there will be a Terminator-style rise of the machines. There does, however, need to be an acknowledgement that our understanding of the world will never be the same again.

“I believe if we could jump into a TARDIS-like time machine and go back to 1801, we’d have changed so much that we probably wouldn’t even recognise ourselves. This change is just something we’ve been experiencing over centuries and will continue to do into the future.

“Fundamentally, touch is about connection. As these technologies develop, we need to realise there will be a change in our perception of touch and therefore our connection with the world and each other. As a result, we become human in a slightly different way.”

**Touch Too will be on display in the Tower foyer until 29 July 2011.**

Alex Hyvonen
Marketing and Communication Unit
Photographer: Joanne Saad

Comment on this article at newsroom.uts.edu.au/2011/07/the-power-of-touch

**“AS THESE TECHNOLOGIES DEVELOP, WE NEED TO REALISE THERE WILL BE A CHANGE IN OUR PERCEPTION OF TOUCH AND THEREFORE OUR CONNECTION WITH THE WORLD AND EACH OTHER.”**
An early role in student services and mentoring, combined with a PhD in linguistics. It may not sound like the obvious pathway for a career focused on improving patient care and safety, but for Professor Rick Iedema it proved the cornerstone on which to build UTS’s Centre for Health Communication.

According to Iedema, who has always believed good communication and safe healthcare go hand-in-hand, his career in healthcare started by chance. In 1997, when linguistics departments were shrinking, he began lecturing in health organisational theory to clinicians at the University of New South Wales.

“Safety is good communication, but people don’t know what this is. In a healthcare setting you often get 10 clinicians lined up for a handover that only one or two of them can hear, most of them are tired, and they do this out of habit. There is no attention paid to the importance of communication.”

Iedema has spent his career working to fix this. In 2006, he joined UTS as Associate Dean (Research) in the then Faculty of Humanities and Social Sciences (HSS). When HSS merged with Education and became the Faculty of Arts and Social Sciences, Iedema decided it was the ideal time to focus on research full-time.

“I’ve always enjoyed mentoring people in research, but getting the chance to do research full-time was fantastic. It was a dream job – I could focus on thinking about my next project, the next paper I needed to write, or who I wanted to work with.”

Iedema says building the right research team is key. “Research problems are complex. You need different people with different perspectives to work on specific problems; teams also need to learn how to work together.”

Iedema and his team’s work on improving clinical handover and clinical incident disclosure (CID) has put the Centre for Health Communication on the map. Clinical handover is becoming more important because of the large number of teams involved in healthcare. CID is the open discussion with patients about things that go wrong in healthcare and result in harm.

“Traditionally, communication was regarded as just the ability to speak English. When things went wrong, clinicians were usually given advice from lawyers or insurers not to talk to patients or their families after an error was made. Now that is all changing.”

Iedema’s unique approach to videoing clinical work practices and in-depth interviews with patients has helped change how clinicians think about clinical safety and incident disclosure across Australia and the world.

About his most recent disclosure study, Iedema says, “What we did had never been done before. Nowhere in the world had this many patients been interviewed about their experiences.” To date, the team have interviewed 119 patients on this topic, and the number is growing.

“It became clear patients wanted an explanation of what had happened, and assurances the same mistakes wouldn’t happen again. The fact we captured this on video made the evidence even more powerful.”

Findings and recommendations produced from an earlier disclosure study, also conducted for the Australian Commission on Safety and Quality in Health Care, led the 2008 Australian Health Ministers Conference to endorse national adoption of CID. And for Iedema, “Seeing states adopt disclosure policy is the real thrill.”

In recognition of his research achievements, Iedema was recently made a fellow of the Academy of the Social Sciences in Australia. He says he’s “pretty flattered” by the appointment, describing it as an “enormous confirmation of the work my team and I have been doing.”

“I want to grow the work the centre is doing. Healthcare is now so complex and so communication-dependent that social science forms a fundamental pillar of making it better.”

“Patients have to be satisfied; processes need to be safe for healthcare to work — and communication is fundamental to that.”

Michelle Callen
Marketing and Communication Unit
Photographer: Joanne Saad

Comment on this article at newsroom.uts.edu.au/news/2011/07/giving-patients-a-voice
A current UTS research project is seeking to untangle some of the gnarlier aspects of assisted reproductive technology (ART) legislation and determine whether people’s ability to access donated gametes (sperm or eggs) and embryos is being restricted by the law.

For most couples, conception, birth and their parental rights are straightforward concepts protected by the law. For others, the necessity of using assisted reproductive technology (ART) can leave them in a legal grey area where the family they desire is out of reach.

Professor in the Faculty of Law Isabel Karpin is one of the lead researchers on an Australian Research Council funded project that aims to clarify where couples stand.

“The basis of the project was a concern that there were many people using in vitro fertilisation (IVF) who wanted more choice about how embryos and gametes were made available,” says Karpin.

“We wanted to know if the way in which the law is being framed may in fact be inhibiting access and limiting opportunities for positive reproductive outcomes.”

The project team has been conducting surveys and interviews with IVF patients to find out what choices are available to them on their IVF journeys versus what choices they would like to make.

Currently, ART in all states and territories is bound by a series of guidelines developed by the National Health and Medical Research Council (NHMRC). In some areas, state governments have developed their own additional laws.

“One of the things that’s actually quite troubling for us is the fact that there’s some ambiguity in some of the legislation and in most jurisdictions there’s no one place patients or clinic staff can go to in order to find out what their rights are under the law,” says Karpin.
In some cases, the laws are discriminatory or excessively restrictive. For example, in most states and territories, donated gametes can be distributed to between five and 10 families. This rule is in place to minimise the risk that children of the same sperm donor will unwittingly meet and form relationships later in life. In NSW, however, gamete donations are limited to distribution to five women.

“The effect is arguably discriminatory against women in same-sex relationships,” says Karpin.

“We’ve had same-sex families where one woman in the partnership has had a child, and then the other woman in the partnership wants to have the next child using gametes from the same sperm donor to create genetically related siblings.

“However, because donated sperm is so scarce, it’s often the case that it has also been donated to other people and the five-woman limit has already been exceeded. This would be less of a problem if the limit was applied to families rather than women.” Karpin says, the donation of embryos complicates things further. According to the UTS research and the outcomes of similar research projects conducted in Australia, many couples feel uncertain about their rights and about what they should do with leftover embryos once their IVF treatment comes to an end. Their options are to dispose of them, donate them to medical research, or donate them to another couple.

Embryo disposal is largely unlegislated, with Victoria being the only state to have clear rules on how the disposition, done by the clinic, should take place. All other states and territories are bound only by the NHMRC guidelines stating that disposal must be respectful and with the consent of both parties who created the embryo.

The option to donate the embryos to medical research is equally tenuous. Many couples opt out because the type of research they are donating to is not made explicit.

“You know, they worry about controversial or unethical practices being carried out on something they consider to be part of them. Many patients would like to specify that the embryo can only be used for specific kinds of research, so there are some things there that the law could possibly facilitate and clarify,” Karpin says.

Perhaps surprisingly, donation to another couple is the least popular of the three options. “A lot of research that has already been published, not just our own, has shown women and men are reluctant to donate for reproductive purposes.

“They start off quite keen, but once they go through the process and have children from the embryos they’ve got in storage, many people tend to see those remaining embryos in storage as potential siblings, or potential children, and so they change their mind.”

Those who do donate, and those who receive the donated materials, often come face-to-face with additional issues.

“What’s interesting about this is that in NSW, if you donate the gamete, you lose the capacity to withdraw your consent once the embryo’s been made. But if you donate an embryo, you can withdraw your consent as a gamete provider to that embryo before the embryo is transferred to the recipient.

“Let’s say you donate five embryos, and somebody uses one of them to have a child, and then you think, ‘Actually, I do want to have another child of my own’. You can withdraw the consent for the recipient to use the remainder of those embryos, thereby limiting their ability to have genetically related siblings.

“So there’s a question mark about whether that’s an appropriate right to be able to withdraw, and we’re getting a mixed response about that.”

The outcomes of the research project will be used to determine whether or not existing laws are unnecessarily restrictive. The team will also seek to make a series of recommendations as to how the laws can become more accessible, transparent and inclusive.

“There are some obvious questions there about whether restrictive laws and policies are limiting the pool of available donated gametes or embryos for reasons that are not very clear,” says Karpin.

“What we hope to do as a result of the project is to come up with a series of recommendations, at least at the NSW level, for the way in which the laws need to change.”

Claire Thompson
Research and Innovation Office
Photographer: Joanne Saad

Comment on this article at newsroom.uts.edu.au/2011/07/seeds-of-doubt
Leigh Angus is a UniQuest Manager of Innovation and Commercial Development. Keith Willey is an engineer who has been involved in the development of SPARKPLUS, a web-based self- and peer-assessment resource kit. They discuss the tensions between academia and the realities of commercialising research.

Commercialising a project is not just about generating a revenue stream for the university. There are no major multi-million dollar deals – or if there are, they’re very, very rare.

We're about making smaller deals more often. Deals that translate new technologies into a product, a service or a process and have impact within industry or the community; really affecting people’s lives. It's about translating Australian ideas and innovation into some form of practical application.

Keith disclosed the SPARKPLUS project to us a couple of years ago. When we met you could almost feel the weight of SPARK pushing down on him; he was overwhelmed. The software is across 14 to 15 universities at any one semester, with sometimes thousands of users. That comes with the requirement to offer support and that consumed a lot of his time.

I actually shied away from the project initially. I knew it was going to be hard to unwind all the agreements and the rather complex history of the project in order for us to go forward.

For us it’s always about sizing the opportunity, sizing the intellectual property and research characteristics, and judging whether it’s worth the time, the expense and the resources for the university, for UniQuest and for the academic to go down that path.

Keith was one of the original people working on the software. It’s been a long journey. Although he wasn’t the instigator, he really owns this project now, more than anyone else who has contributed or since come on board. So opening it up may have been hard.

Keith would probably agree there were difficulties, especially the negotiation around how much each party owns and who should get what and determining the best pathway for the project. Sometimes it’s hard to talk with academics; they don’t fully understand what we’re about.

I think some have the impression we’re trying to spin a quick buck off their ideas, which really is a complete misconception. A lot of what we're attempting to do is create a cycle of innovation where ideas go out to market, market responds to those ideas and drives further innovation in collaboration with the university.

At the end of the day, we’re on the ground working with researchers, exploring and researching the marketability of their ideas as they respond to some of the big challenges of the world.

We also want to make sure the researcher receives credit for their work and are acknowledged in their industry and by their peers. As long as we're factoring in those fears within the commercialisation cycle, I think any distrust from academics disappears fairly quickly.

I’m really interested in what the academics are doing. If I’m able to give advice from an industry perspective, I'd hope it’s received and welcomed. I’d also hope it has some influence on their research and the potential impact it might have in the future.

As the saying goes: ‘From little things, big things grow’. These seed ideas that start at very early stages within a university can really blossom and grow into big things in the commercial world. That’s what’s exciting for me.
To be honest, I don’t think commercialisation is highly valued. If I was applying for a promotion, my school is interested in the ranking of my journal and conference papers and the amount of research grants I’ve got, not whether something I’ve developed has been commercialised.

In many cases, innovations that are commercialised have been built on the back of Australian Research Council grants or research seeding money. SPARKPLUS has had none of that. We did get some money through the Learning and Teaching Performance Fund (now known as the Vice-Chancellor’s Teaching and Learning Grants) and my Associate Dean (Teaching and Learning) Tim Aubrey, which we used to great effect, but we’ve never had a lot of funding considering what we’ve done.

With our innovation being educational, I personally don’t expect it to make huge amounts of money. You’ve got to weigh up the impact – would it be better for us to make something freely available and have a high impact for UTS through badging? You may get a lot more people picking it up.

I think every academic is attached emotionally to their research; you’ve invested so much of yourself in it. You’ve got to separate emotional attachment and ownership from what’s commercially viable and what you can expect to do. Leigh’s been able to be objective and give us a commercial point of view.

I have to trust that Leigh knows her job. She listens to our opinions and takes them into account. Let’s face it, as researchers, we’re always pressed for time, so how would we have time to commercialise something? We’re not lawyers; going out and trying to negotiate commercialisation agreements on our own would be difficult.

It really wouldn’t have happened without Leigh. She hasn’t just gone for whatever she can get. When speaking with commercial partners, she can be hard and say, ‘Nope, this is what’s going to happen, take it or leave it’, which is good. Her eyes are on getting the best commercialisation deal, not just any deal. She’s stopped people taking advantage of us.

If this product didn’t have commercial value, I don’t think the research office would be interested in what we’re doing. They need to have a better model to support things that have potential, to give academics more incentive. If we’d received research funding – and we did apply for grants, unsuccessfully – then that’s a different kettle of fish.

The split with the university is the same even if you fund the work yourself. As an engineer, it’s been hard to get funding for educational research as it’s often not recognised as research, but rather, seen as teaching and learning. As a result you do a lot of work in your own time with your own money.

In saying that, for me, the reward is seeing my work get used. There are plenty of inventions lying around that go nowhere. The university needs to help people in the early stages, rather than jumping in at the end.

We sometimes encourage students to think about commercialisation within their own research projects. Keeping their ideas confidential so they could actually be marketed or sold is something they have very little experience with.

We should also be encouraging our research staff. I’m not sure universities have yet figured out how to manage the nexus between publishing research and retaining a little information as confidential in order to pursue a successful commercial path.

Katia Sanfilippo
Marketing and Communication Unit
Photographer: Joanne Saad
Comment on this article at newsroom.uts.edu.au/news/2011/07/sparking-innovation
“As a kid I always wanted to do something that would benefit others,” says Joshua Chou.

As a UTS Chancellor’s Postdoctoral Research Fellow and an Endeavour Award recipient who specialises in biomaterials, tissue engineering and drug-delivery systems, Chou is doing just that.

Along with a team of UTS researchers, he is working on the development of a new graft material that will help the human body rebuild its own bones. The material is based on corals and coral sands, which have a unique architectural structure.

“These coral structures can’t be reproduced synthetically – it’s amazing what nature can provide,” he says.

“As part of my research we’re trying to determine what is in the organic component of the coral that allows it to promote this bone regeneration.

“If we can isolate it and identify it, then maybe we can develop a cocktail that can be incorporated with other biomaterials to promote better tissue regeneration.”

Currently, bone grafts or implant materials are made of metallic substances which the body recognises as being foreign objects. These implants have a lifespan of around 15 years before revision surgery is required to remove or replace them.

“In the case of very elderly patients, this revision surgery sometimes poses a huge risk,” Chou says.

“With the corals, however, your body actually builds its own new bones. So instead of having a metallic implant for life, your body re-grows itself, which is much better.”

Chou, who undertook his undergraduate, honours and PhD studies at UTS, says his success as a researcher in the field of biomaterials has been driven by something bigger than just an interest in science.

“My mother suffers from osteoporosis, so I know first-hand how bone-related diseases can affect patients and their families.

“This research is very important to me on a personal level.”

At a global level, the need for effective bone-graft and tissue-regeneration technologies is vital. An ageing population means an increase in osteoporosis and bone fractures that can hamper the ability of elderly people to take care of themselves.

“We’re an ageing society; everyone, more or less, is going to have some sort of bone problem – either osteoporosis, loss of bone density or broken bones,” Chou says. “It’s crucial that we develop an effective solution.”

The development of stem-cell technologies is rapidly taking the field of biomaterials forward. Researchers are developing custom-made biomaterials that are specifically designed for individual patients, as well as others that target particular ailments and diseases.

“What scientists are working on is to make these materials more bioactive, meaning they are trying to foster more interaction between the material and the surrounding environment to promote a better integration, and therefore, better bone regeneration,” says Chou.

“The use of stem cells will allow materials to be tailor-made to suit an individual; these therapies can reduce the probability of rejection by the body.

“I think in the next 10 years we’ll be seeing see more and more custom-made biomaterials being developed.”
Though some critics label the musings on microblogging website Twitter ‘mundane’ and ‘egocentric’, new research is unveiling an untapped mine of useful data.

Lecturer in Executive Education and social media researcher in the UTS Business School Dr Suresh Sood, Faculty of Engineering and Information Technology’s Senior Research Associate Dr Benjamin Johnston, and Professor of Information Technology Ernest Edmonds have teamed up to capture, analyse and use Australian tweets to create a mood map of the nation.

The social media research project – which is due for completion at the end of this month – was initiated by Sydney-based advertising agency The Works and managed at UTS by the Research and Innovation Office’s Sarah Vella. It’s funded under the NSW Government’s TechVouchers program, which encourages collaboration between NSW businesses by providing seed funding to help them engage with research facilities at NSW universities.

“We’re undertaking this quantifiable research because we want to have a deeper understanding of the social media landscape,” says The Works’ Brand Manager Gemma Hogan.

“We work hard to ensure clients’ marketing dollars are well placed and well spent, and when we talk to clients about social media and digital campaigns, we want to be able to bring fresh insights and an authoritative voice to the table.

“We approached UTS as I saw Suresh at the 2010 CeBIT conference speaking on the topic of social media. Suresh, like UTS, has a great knowledge base and we knew he would bring great insight to the research brief.”

According to Sood, the project is centred on socionomics, or “the science of moods”.

“By aggregating and taking messages from Twitter, we have, for the first time, the ability to understand the mood or the way people are thinking at one moment in time.

“It gives us another dimension, a geographically based dimension, to understand the kind of storytellers that are in place, what kinds of stories are being told and how people are interacting with brands.”

Sood says this kind of knowledge will allow advertisers to engage brands as part of consumer conversations. “For our principal sponsor, The Works, what’s interesting for them is finding out when the best time is to let consumers know about a new TV program or about a special offer.”

Since April, Johnston has been collecting and analysing raw Twitter feeds. Edmonds, a human-computer interaction expert and artist, will this month use the data to create a mood map.

Johnston says, “I have been collecting millions of messages posted to Twitter over the last month and loading them into a database. This will then be analysed by scanning for cue words that have emotional associations.”

The database allows the researchers to refine the user’s location and determine their gender, the original time of the tweet, if it has been re-tweeted and if it includes any profanities. Johnston will also use a software program created by Sood during his PhD – which he completed at UTS last year – to analyse the text according to Jungian archetypes – like the hero, mother and joker.

“By archetype we mean a pattern of behaviour,” explains Sood. “It’s basically the primal interaction of humans, in everyday life, connecting with everyday objects and brands reflecting unconscious, instinctive survival behaviour inherited through the ages.”

Though results are yet to be seen, Sood says, “We could well see certain geographic locations have certain types of archetypes. Hypothetically, people in one area may be a bit more frivolous than they are in another.”

There are wider social and humanitarian implications too. Sood hopes to one day apply the same thinking to analyse tweets leading up to natural disasters as a way to uncover early indications for these events.

Johnston agrees. “This kind of processing of Twitter data is the first step towards using artificial intelligence to make our lives better. It’s a stream, it’s continuous event data, it’s emotive and it’s an interesting application for understanding life.”

Fiona Livy
Marketing and Communication Unit
Photographer: Joanne Saad
Comment on this article at
newsroom.uts.edu.au/2011/07/twitterverse-exposed
10A is the most gentle and gorgeous sidekick I’ve ever met, whilst Campbell is an articulate cynic with razor-sharp wit just trying to survive the ups and downs of life.

This photograph was taken last year by visual communication student Teressa. In a confronting yet honest account of life on the streets, they form part of a documentary project she created about “streeties” and vendors.

Photographer: Teressa

This image is taken from Effy Alexakis’ photographic series, *Feel the Music*. The images focus on the performer’s ‘touch’, which demonstrates the materiality of music, that it is produced through the body of the performer.

Image courtesy of Effy Alexakis. ©photo by Effy Alexakis