Welcome to our October newsletter

I am writing this from the University of California, Berkeley. The University is hosting the 2016 Times Higher Education World Academic Summit; and university representatives have been discussing, debating, and dissecting the present and the future of our sector.

What I am hearing and contributing to at Berkeley – my session was on future university financing models – is that regardless of whether we are public or private universities, and no matter where we are based geographically we appear to face the same, or very similar issues.

Some universities of course benefit greatly from their nation’s community ethos. Nowhere is that more stark than when discussing future financing models. In the US, Harvard for example, receives 45% of its funding from community “gifting”. In Australia we have been pleased that philanthropy contributed 1.5% of Australian university operating revenues in 2014 compared with 1.3% in 1995. I found US universities lacked information about “gifting” in Australia. There were assumptions we enjoyed a similar level of community support from our alumni. That Australian philanthropy was in its infancy by comparison was met with some “difficulty to process that” as one US university executive put it.

The Berkeley dialogue, which included in-depth discussions on private good versus public good, equity, graduate employability, and undergraduate profiles, does, by pure coincidence, fit neatly with this issue’s main feature. The University of Adelaide’s DVC Academic, Professor Pascale Quester discusses and questions the (unfortunately) prevailing view that someone is a lesser individual if they do not attend university. Yes the feature is provocative but universities are there to lead community debate. I commend Professor Quester for her willingness to tackle this issue. It was most certainly a discussion at the summit, both officially and external to the sessions. The need for Governments to settle on policy that allows for a sustainable future for our sector was also to the fore. As it relates to both funding and wider policy programs supported by Government, it is clear that every university feels strained and constrained by the policy uncertainty that faces so many of us.

This again fits neatly with this issue’s “From the Outside Looking In” column. Written by Menzies Institute Executive Director Nick Cater, it is a personal viewpoint re what our sector confronts with the current construct of the Australian Parliament. Nick doesn’t let universities off the hook however and is frank in his views of our positioning and the work we must do. We may not all agree with Nick’s viewpoint but it is important to take note. I have always been open in stating that the Go8 newsletter is not published as a public relations exercise but as a tool to stimulate debate and share information that assists the sector more generally. Both of our contributors do this articulately and from a base of knowledge and critical thinking. We are fortunate to have their contributions at such a pivotal time for the sector in Australia.

In Australia we have been pleased that philanthropy contributed 1.5% of Australian university operating revenues in 2014 compared with 1.3% in 1995.

There are of course no easy answers but sensible unemotional debate with peers, politicians and media is a good start. As I leave Berkeley to head home I am left with a strong view that as a sector we are not doing too badly in Australia. We are positioning ourselves smartly. We have set achievable quality goals...
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despite Government policy or more correctly the lack thereof.

How much better we could be for our students and our researchers and therefore the economy and the lives and health of every Australian from good Government policy decisions which not only protected funding but delivered long term sustainable funding. We can but hope that some sensible bipartisan policy future is possible. It is surely time for policy maturity in Canberra for a sector that is so pivotal to our nation’s future.

The Go8 will continue to lobby to secure such an outcome. Please enjoy this issue which as always also showcases examples of our research. There is always a feeling of immense pride at what we do each and every day as Australia’s leading research intensive universities.
Faulty gene’s link to depression and cardiovascular disease

The findings have ... highlighted one gene that until now has gone under the radar in relation to mood disorders.

Researchers at the University of Adelaide say they may have discovered a new target in the fight against depression: a faulty gene that is linked to cardiovascular and metabolic conditions.

A team led by the University of Adelaide’s Discipline of Psychiatry has reviewed and attempted to replicate the findings of the growing body of research showing the types of genes expressed in the brain and surrounding tissues during depression.

The findings have supported the many theories re the underlying genetic causes of depression, and have highlighted one gene that until now has gone under the radar in relation to mood disorders.

"Depression is much more complex than most people think, and it includes dysfunction at multiple biological levels, from genes to brain regions, and blood circulating through the body," says Professor Bernhard Baune, Head of Psychiatry at the University of Adelaide.

"The state of depression can also change over time, it goes through various phases and it may present with a large range of symptoms. In those circumstances, it shouldn’t be surprising that while there’s a growing body of research investigating the underlying genetics of depression, so far there have been inconsistent findings in various studies throughout the world."

The team examined and re-analysed in a novel way research covering 16 brain regions and five cell types from the peripheral nervous system.

"What we saw was overlap in genetic expression between the brain and peripheral tissues that strongly implicated a link between depression and cardiovascular disease," Professor Baune says. "Out of this, we identified the gene PXMP2 as a potential candidate for further investigation."

PXMP2 plays a role in the permeability of microbodies called peroxisomes, which break down fatty acids in the body and convert them to energy.

"PXMP2 is robustly expressed during depression. However, to the best of our knowledge, neither this faulty gene in particular nor its related functions in metabolism have ever been investigated in relation to mood disorders of any kind," Professor Baune says.

"With the shared pathways between cardiovascular disorders and depression, we suggest that faulty regulation of the PXMP2 gene may play a role in depressive disorders via specific metabolic pathways."

Professor Baune says he doubts that one single gene has the biggest role to play.

"Our research on genetic networks also showed support for the wide range of theories that different genes may play a role in depression, including those involved in regulation of serotonin, melatonin and the immune system, among many others. Even so, PXMP2 represents a very strong, new target for future research programs," he says.

This research has been funded by the National Health and Medical Research Council (NHMRC).
RESEARCH

UQ’s work on inflammatory disease treatment wins $22m global investment

“We have spent many years researching the important pathway so are excited about the potential to develop a drug candidate that would help to treat millions of patients suffering inflammatory diseases.”

Inflazome Ltd, a company founded on research from The University of Queensland (UQ) and Trinity College Dublin, has closed a Series A financing round of up to €15 million (A$22 million).

Inflazome is developing treatments by inhibiting the inflammasome, a key biological pathway associated with a wide variety of diseases driven by chronic inflammation.

The intellectual property is based on work by UQ Institute for Molecular Biosciences researchers Professor Matt Cooper, Dr Kate Schroder, Dr Rebecca Coll and Dr Avril Robertson; in collaboration with Professor Luke O’Neill at Trinity College Dublin.

Inflazome, headquartered in Ireland, is developing treatments for inflammatory disorders including Parkinson’s disease and asthma.

The investment, co-led by two top global life science investment firms, Novartis Venture Fund and Fountain Healthcare Partners, is one of the largest biotech Series A investments for intellectual property originating from an Australian university.

It is the latest in a recent series of international commercialisation deals based on UQ research – including one of Australia’s biggest-ever biotechnology transactions, which involved a new class of chronic pain drug and Novartis International AG.

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UQ’s main commercialisation company, UniQuest, commercialised the research on behalf of UQ and Trinity College Dublin.

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After the UQ-Trinity College Dublin collaboration resulted in a publication in a leading international journal, Nature Medicine, the jointly-owned intellectual property was exclusively licensed to Inflazome.

Researcher Dr Kate Schroder said the potential for a small molecule inhibitor of this target was extremely promising.

“We have spent many years researching the important pathway so are excited about the potential to develop a drug candidate that would help to treat millions of patients suffering inflammatory diseases,” Dr Schroder said.
The good news is that higher education reform remains part of the agenda. The bad news – for the sector at least – is that Malcolm Turnbull’s government has other things on its mind.

It will come as little comfort to those in academia to learn that theirs is not the only reform-starved sector of the economy struggling to get the attention of government.

There is no point either pointing out the blinding obvious: the impasse can’t last forever if we want our universities to be defined by excellence rather than inclusiveness for, much as some might hate it, they can never truly be both.

The good news is that higher education reform remains part of the agenda. The bad news – for the sector at least – is that Malcolm Turnbull’s government has other things on its mind. It may be on the table, but an honest assessment of the mood in Canberra suggests the Coalition is unlikely to do much more than jab a fork at it in this term of government unless momentum can be driven from outside.

Clearly this must come from the sector itself which should learn from the mistakes of the past three years and begin building an unanswerable case for change.

That shouldn’t be hard. Labor’s decision to uncap places while insisting that the government continue to regulate prices is one of those bad ideas that should have been obvious at the time. We’re all in favour of a better-educated workforce, but it hard to see how overcrowded, understaffed institutions offering underwhelming courses to disengaged students advances that goal.

And don’t let’s get started on the cost, or the blank cheque the Commonwealth is obliged to write each year since plays were uncapped. By the end of this financial year the changes will have added another $7 billion at least to Budget bottom line, and that is not including the losses incurred running the student loan program. The HELP scheme breaks the golden rule of prudent banking: the lending rate cannot be lower than the borrowing rate, particularly when an estimated 17 cents in every dollar you hand out is money you’ll never get back.

The lesson of the last three years of fiscal frustration, however, is that rational economic arguments count for little in the Senate. Sectional interests prevail a chamber of review that has become a killing ground for common sense, particularly if it demands cutting expenditure.

Yet there are good reasons why the sector should not abandon hope of reform in this term of parliament, despite the Prime Minister’s narrow majority, the scale of the policy and fiscal challenges and the wall of obstinacy his government faces.

The continuity in Mr Turnbull’s Cabinet that has given Education Minister Simon Birmingham the space to pursue a challenge that he clearly relishes. The process he began in May with the release of the discussion paper “Driving Innovation, Fairness and Excellence in Australian Higher Education” continues. Submissions will be published by the end of the year, and an expert panel convened to pursue discussions in 2017.

The paper opened up new lines of discussion that have the potential to build a broader and more persuasive case for reform. It recognises the role of universities in science and innovation, a topic that remains near the top of Malcolm Turnbull’s agenda and is clearly a matter of vital national interest.

It also opens up an honest discussion on the concept of “fairness” – a word that is a surprisingly recent arrival in civic debate. A text scan of Hansard, for example, show few examples of its use before the election of Kevin Rudd in 2007.
The HELP scheme breaks the golden rule of prudent banking: the lending rate cannot be lower than the borrowing rate, particularly when an estimated 17 cents in every dollar you hand out is money you’ll never get back.

The paper redirects discussion towards equity of opportunity rather than equity of outcomes. Fairness requires lowering barriers, raising aspirations and broadening entry points but not lowering standards. The request that the Higher Education Standards Panel reviews admission practices is timely.

Second, the ranks of the second term Turnbull government may be depleted, but there are many voices in the party room who are potential advocates for the sector. The new member for Berowra, Julian Lester, was closely involved in the last reform discussions on behalf of the Australian Catholic University. A former predecessor of mine at the helm of the Menzies Research Centre, Lesser has a strong policy mind and a firm belief in the importance of Higher Education.

The new Member for Boothby, Nicole Flint, spoke of her attachment to Flinders University in her maiden speech. The sector can count on these and other strong-minded members and Senators not to let the reforms die twice.

Third, the new Senate cross-bench has a different complexion. It has yet to be tested on reforms of this nature. Some of those who blocked the previous legislation, such as Glen Lazarus, have left the building. Family First’s Bob Day and Liberal Democrat David Leyonhjelm, can be relied upon as partners for common sense.

But building momentum for reform will require a frankness hitherto lacking in this debate. It will require an admission that for all the good intent of the Rudd and Gillard governments, uncapping places has done little if anything to increase the proportion of low SES students attending university. The social engineers should face facts; postcode equity is an unobtainable goal, and the extent to which we can afford to pursue it is a cold-hearted economic decision.

The sector must draw honest conclusions from the alarming drop-out rates in second-tier universities and recognise that shoe-horning students into courses that they are unlikely to complete is causing long-term reputational damage to the sector, not so say untold grief and pointless expense to individuals. Universities are there to lift our hopes, not to crush them.

Nick Cater is Executive Director of the Menzies Research Centre. The views are his own.
Hybrid research challenges ‘super-species’ thinking

It’s similar to what happened to humans: we are the product of our ancestors mating with Neanderthals some 20,000 years ago ...

Hybridisation, where two species mate and create fertile offspring, is known to lead to successful plant invasions. But it is not just the formation of DNA into a new species that makes hybridisation important. The history and sequence of invasions can also determine how a weed survives in its new environment.

Recent research has provided novel insights for biosecurity policy makers, and was led by Professor Roger Cousens from the University of Melbourne, along with collaborators from Canada and the United Kingdom.

Researchers looked at the American Sea Rocket (Cakile edentula) which arrived in Australia in the 1850s; first in Victoria and then spread quickly to the west, north and south. It was joined about 50 years later by the European Sea Rocket (C. maritima).

The two plants cross-pollinated, but instead of creating a permanent hybrid, the European plant took over, with only a few genes from the American plant left to show for its existence in much of Australia.

It’s similar to what happened to humans: we are the product of our ancestors mating with Neanderthals some 20,000 years ago, which we know from the presence of Neanderthal DNA in our genes.

“European Sea Rocket may have picked up genes from the American species, but it isn’t any more vigorous than it previously was. Its performance as a competitor hasn’t really been affected.”

“Like Neanderthal humans, the American species has pretty much gone, though there is just a small portion left in southern Tasmania and northern NSW and Queensland,” Professor Cousens said. “Unlike Neanderthals, which we can only study long after the event, we are still able to study European Sea Rocket replacement as it happens.”

Professor Cousens said that while biosecurity policy makers and researchers usually consider invading species as independent events, what happened with the sea rockets shows that the sequence in which they invade can be crucial.

“By doing computer modelling, we’ve shown that not only can hybridisation be really important, but it can be important in different ways than people have previously guessed.

“Our conclusion is that if the European species had got here first, it could have had problems establishing itself. But because the American version was already here, the European species then had something to mate with and subsequently thrived.” Intriguingly, this is only possible through the behaviour of pollinating insects, which prefer the larger flowers of the European species.

This ‘head start’ could be a reason why the European Sea Rocket dominated and has essentially obliterated the American Sea Rocket.

While both sea rockets are classified as invaders, that doesn’t mean they lack any redeeming qualities – the European Sea Rocket has many uses.

“The European Sea Rocket is a source of nectar for both native butterflies and exotic honey bees, native parrots eat the seeds and young shorebirds may use them to hide or for shelter. Although it wasn’t here originally, it competes with very few native plants. So there are a lot of positive and negatives aspects of the species.”
Accurate prediction of cosmetic surgery results

Researchers at The University of Western Australia have produced a new 3D imaging system that will provide patients considering facial cosmetic procedures with an accurate prediction of the results.

The system will replace misleading and unreliable before-and-after 2D photographs that are currently being used by most health practitioners performing cosmetic work.

Winthrop Professor Mohammed Bennamoun, from UWA’s School of Computer Science and Software Engineering, said the team had developed a fully automatic system to produce a 3D analysis of the outcomes of facial rejuvenation procedures.

Professor Bennamoun said there was a rising demand for subtle and ‘natural’ enhancement of personal appearance through cosmetic medical procedures, which was due to many factors including the increasing longevity of the population, more people returning to the workforce and more frequent relationship turnovers.

“What we are working on is a 3D system that compares two overlaid images to produce a single and precise evaluation of the actual effects of a cosmetic procedure.

“The system indicates where the changes have occurred and by how much, in association with a probability-based predictive modelling system to help the patient understand the potential changes before treatment.”

The research is a national collaboration led by 3D computer vision expert Professor Bennamoun and includes UWA 3D computer vision researcher Dr Syed Afaq Ali Shah and Dr Michael Molton, a UWA graduate and cosmetic medical practitioner, based in Adelaide.

Dr Molton and his team in Adelaide are running a trial of the first working prototype which demonstrates changes in pre and post-treatment 3D facial scans.

In September the researchers received the “Start Something Award for Research Impact through Enterprise” at the UWA Research Excellence and Innovation Awards and Honours Awards as part of UWA Research Week.
Why exactly should university be for everyone?

Professor Pascale Quester, Deputy Vice Chancellor and Vice President (Academic) University of Adelaide
Chair of the Go8 DVCA committee

FOOD FOR THOUGHT

One of the (admittedly few) benefits of having a marketing degree for a university senior executive is the capacity to see what appears invisible to others, or perhaps what they simply refuse to see.

To wit the recent outrage voiced by many at the suggestion that university is not for everyone. Between those who chose to read this as an attack on the demand driven system, and those who contend that the mere suggestion of a less than universal system represents an unacceptable level of elitism and/or a sinister ploy by those in power to refrain others’ access to education, the voice of reason has been drowned.

Perhaps, if only ideology could leave the room for a moment and leave the door open for common sense to return, the truism that not all students are alike and therefore, that not all of them will find what they need or want in a given type of institution could be agreed by all.

Admittedly, Australia’s higher education system experienced a rare degree of ‘forced homogenisation’ in the Dawkins’ era. By definition, the Dawkins reforms aimed to lessen the differences between tertiary education providers, creating in one stroke a large university sector where over 30 actors have since sought to develop common traits, I would suggest at the expense of the sort of diversity that typically serves consumers best.

First victim of this reform, I believe, was a whole group of institutions where learning and teaching had developed to great levels of excellence, but which from that moment determined that their future lay elsewhere, in emulating the research culture and productivity of those institutions now described (or reviled) as the Group of Eight (Go8). Just as in the Cold War, the war of talent and the escalation of research infrastructure started to drown all else in what quickly became a stiff competition for ranking.

The arms’ race of universities include multiplying highly cited staff, building medical schools and poaching research teams whom we have now quite successfully trained to follow the highest bidder with little or no loyalty for the institutions that may have helped them develop their profile or discoveries. None of which, incidentally, remotely likely to improve the student experience…

Contrast this with a model such as France where universities are indeed tied into a national system so tight that academic promotions are still considered at the national level, with a National Committee which, in declaring an academic “Professeur des Universites” the ultimate accolade, may at the same time wreck his or her family life by offering that role in a completely different city, sometimes, at the opposite end of the country. But where the system allows other types of institutions to coexist, such as a the Grandes Ecoles (usually aligned with professional accrediting bodies, or Chambers of Commerce), or the IUTs, the technical vocationally orientated providers for those seeking a different type of qualification. Similarly, the US tertiary landscape has evolved a system where the highly visible Ivy League group is complemented by a myriad of colleges and teaching institutions, catering to the taste and preference of a large and diverse population of students.

However, where Australia has led and set a unique example is with its adoption of an income contingent loan, where the cost of education (which is never free, regardless of slogans or populist discourse, but borne either by students or by tax payers) is indeed a public investment, as it surely ought to be, unless and until such time as the graduate has derived sufficient economic value from it as to be able to repay, ensuring that others can follow in their footsteps. A great model of progressive, yet economically responsible, policy setting and one which was overlooked or unfairly dismissed during the great deregulation debate of the Pyne years. A system that enshrines a principle of access and participation dear to every university in this country, including the Go8, and which indeed is paramount to their success. How else could we attract the best minds, if social background, gender or race could stifle or prevent access to universities?

Some 30 years after Dawkins, the next disruption to the sector came with the wide acceptance of what is now referred to as the DDS, or demand driven system. For all its limitations, not least its long term affordability and its capacity for private providers to shamelessly abuse it, this was a brilliant and visionary piece of social engineering. To set in such clear terms a desirable target, and set the agenda to deliver a Bachelor degree to 40% of a given age group does not. And the rub is that the message was lost in translation. If 40% of an age group goes to university, then it follows that 60% of that age group does not. And the risk, in what has become the narrative of the country around high education, is that this
60% now sees its prospect as diminished, and their sense of self-worth as damaged.

It does not take a Bachelor of Mathematics to work out that 60% of people is a larger contingent than the 40% group. Yet, for a simple and arithmetically undeniable statement that not everyone should attend university to raise such a furor as it did, it is clear that many now believe that university is literally for everyone. The corollary to this being that everyone should want and be able to go there, and the dangerous implication being that anyone who does not try, or who tries and fails, must therefore be categorized as a failure, a blot on their family’s expectations and dreams, a cost to the country, a shameful burden.

How did this happen? When did we lose sight of the great diversity in aspirations and skills that characterize any large population like Australia? When did the argument in favor of opportunity and access become a requirement, an entitlement and an obligation for all? We don’t expect everyone to be able to be a doctor, we don’t demand that everyone should be able to pilot a plane and we certainly do not (and that is another debate of our times) believe that everyone can be a teacher.

How, then, did we ever come to this new social expectation that everyone should have a university degree? Do we want to follow in the footsteps of France where a five year university master’s degree will get you, if you are lucky, the supermarket checkout job which we now know technology will render obsolete in the next five years? And where people who aspire to careers will avoid universities altogether to court the highly selective (and costly) alternative of a Grande Ecole?

In my (obviously simplistic) marketing analysis, the rich variety of needs and wants of young and older people seeking tertiary education calls for, and deserves no less than, to be served by an equally rich variety of options. For those who seek the challenge of research and academic rigor, the Go8 offers a traditional, yet proven model of discovery-led pedagogy and intensive interface with researchers. For those seeking a ready set of applied skills, other universities should pride themselves on the excellence of their professional relevance and connections. For those attracted by technology and its wide range of applications, yet other institutions should position themselves as best equipped to educate and train them. And for those seeking to pursue a trade or a specific craft, then TAFE and apprenticeships should not be the least favored but the most valued of educational paths.

If the market is segmented, and I contend that it obviously is, the higher education sector should be differentiated and the war of claims and counterclaims should stop because, with every cohort of young people who are pushed by their parents or by society at large in the wrong direction, it is individuals who will experience neither fulfillment or satisfaction but instead carry with them – for the rest of their lives – the stigma of a failure they did not need to have, and the weight of a debt they should never have faced.

In my discussion with the TAFE sector, whereas my counterparts invariably want to discuss pathways and articulations
I would want a system where a young person who pursued a trade and worked for some years may discover a passion and an appetite for further learning...

from TAFE to University, which I agree is a good and sensible thing for many students, I often turn the table and seek reassurance as to the reciprocal porosity of the boundaries that separate us. Why, I argue, should we allow a student to fail within our ranks, when, by their own account, they are obviously in the wrong place? What can we do together to offer them as a pathway to success? This logic, I believe, should lead us to seek complementarity in the sector, away from the false and impossible homogeneity envisaged by Dawkins, and enabled by the DDS, towards a differentiated and customised experience for each and every one of that next generation of learners.

The vexed question of ATARs is a case in point. In Go8 universities such as mine, students typically come from schools and are able to demonstrate the sort of academic capacity which an ATAR over 80 represents. Should ATARs disappear, as has been stridently called for by others in the sector, then the peril to the students is both real and immediate. Persuaded by a social discourse which values universities above all other alternatives, and unsure of his or her own level of preparedness, he or she may embark on a journey which will not only accrue him or her a lifelong debt, but one that will leave them with the bitter and lasting taste of failure.

I dream of a system where individuals make choices based on their needs at that time, in the full knowledge that nothing is mutually exclusive but that learning opportunities and qualifications can come in sequence, when they are ready, and when they can succeed. I would want a system where a young person who pursued a trade and worked for some years may discover a passion and an appetite for further learning and I would hope we would have the sort of system that can welcome them and cater for their wish. I would want a system where a young person who has come to university but does not enjoy it nor see any merit in it can flexibly change and engage in a different path, with no social stigma and no accusation of failure.

I would want us to design and support together as a sector, a tertiary system that is non-judgmental, less status driven but founded on excellence and choice and where every young Australian knows there is a path to success, one that can include, but does not impose, a university degree, and one they can call their own. And I would want those students who join the ranks of a university to experience the blossoming and growth that they seek and deserve, because they are ready, willing and able to engage in and co-create their own education journey, their own path of self-discovery.

Now that the dust has settled on deregulation, and now that transparency and wider communication of ATAR requirements can assist students to use their ATAR as a useful indicator (but not a perfect predictor) of their preparedness for university programs, I hope my dream can eventually come true.