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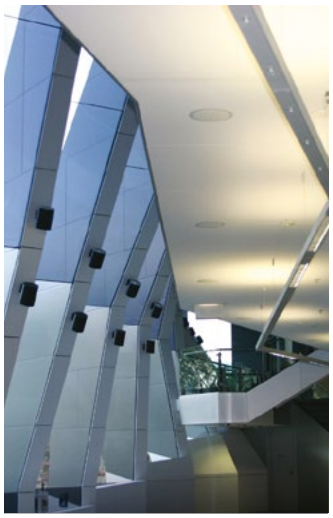
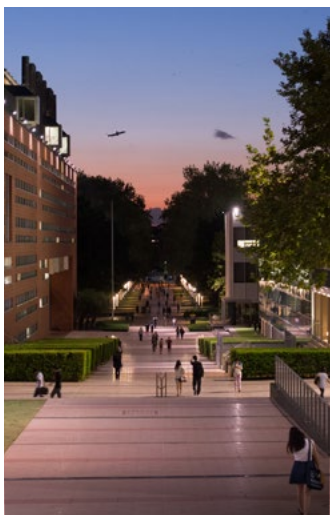
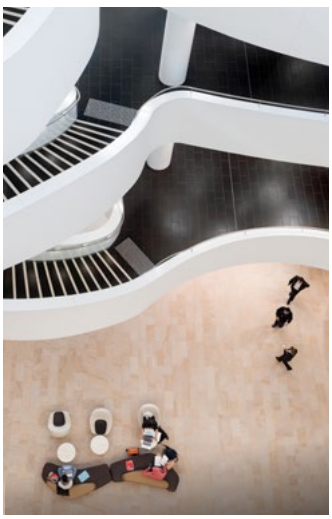






CEO'S MESSAGE

Welcome to our final newsletter of 2017

It sums up the year to say that we do indeed live in interesting times.

In this end of year "report" I am going to avoid politics other than to say it would be hard to point to any meaningful progression on the sector's quest for long-term sustainable funding since the Federal election.

We can only hope that 2017 shows some move to being what the Government keeps promising – a "term of delivery" as it relates to the major issues affecting our sector.

Meanwhile the Go8 has been keeping on with keeping on, as, while advocacy is at the core of what we do, it has a much wider platform, and audience, than Parliament House Canberra.

We have, for example, recently sponsored the Australian Council for Social Services (ACOSS) national conference and are in discussions with ACOSS to pursue a long term partnership to advocate for policy that delivers true equity into higher education.

Each of our eight universities can point to a number of meaningful and determined programs they have introduced to assist, but so much more needs to be done across the sector and we are hopeful that we can play a substantial part in helping make that happen.

Mark Burford, current policy adviser to the Vice Chancellor, Monash University and previously the senior adviser to Julia Gillard when Australia's demand driven system of university entry was conceived, represented the Go8 on an Education and Equity panel at the recent ACOSS conference. In this newsletter he makes a further thought-provoking contribution on the subject of true equity.

We also report on Australia's first-ever Australian graduate career portal in China – one the Go8 has sponsored. In partnership with AustCham we have been pleased to assist this portal's development and launch. It connects our International Chinese students who graduate and choose to return home to work, with large global and Australian companies searching for graduates to employ in China. The positive response to the portal's launch has been absolute proof of how much something like this was needed, and how valuable it will be.

And don't miss the contribution by former Senator John Black now one of the region's most sought after socio-political data analysts. He looks at how shifts in schooling and socio-economic factors will combine to significantly affect the higher education sector in coming years.

Meanwhile the Go8 has taken over as 2017 convener of the Global Council of Research-Intensive Universities. This Council brings together the world's leading university groups when there is benefit in advocating a common goal. As convener, the Go8 will host the Council's next global annual

Meanwhile the Go8 has taken over as 2017 convener of the Global Council of Research-Intensive Universities. This Council brings together the world's leading university groups when there is benefit in advocating a common goal. As convener, the Go8 will host the Council's next global annual meeting, to be held in Brisbane in the spring of 2017.

meeting, to be held in Brisbane in the spring of 2017. (See our newsletter report on the 2016 annual meeting).

The main focus and discussion of the Global Council in 2016 has been on the protection of basic research and in working to ensure our politicians and our communities understand its immense value. That focus will continue in 2017.

Also looking forward, in 2017 the Go8 will welcome a new Chair – Professor Peter Høj who is Vice Chancellor and President of the University of Queensland (UQ). Professor Høj is currently deputy Chair of the Go8 and a passionate and vocal advocate for basic research here and overseas. He has been Vice Chancellor of UQ since 2012. There he has built an enviable reputation for his commitment to successful research commercialisation and to strengthening university relationships with Asia.

We thank our out-going Chair Dr Michael Spence Vice Chancellor of the University of Sydney for all his time and effort in 2016.

The Go8 is looking forward to a very active 2017 and wishes everyone a happy holiday season.

Also looking forward, in 2017 the Go8 will welcome a new Chair – Professor Peter Høj who is Vice Chancellor and President of the University of Queensland (UQ).

CEO Vicki Thomson

RESEARCH

Melbourne's 3D jet engine technology flies into production in France

The Monash University-led team who printed a jet engine last year have enabled a new venture for manufacturing aerospace components in France.

Melbourne-based Amaero Engineering—a spin-out company from Monash University's innovation cluster—has signed an agreement with the University and Safran Power Units to print turbojet components for Safran, the French-based global aerospace and defence company.

"Our new facility will be embedded within the Safran Power Units factory in Toulouse and will make components for Safran's auxiliary power units and turbojet engines," said Mr Barrie Finnin, CEO of Monash spin-out company Amaero.

Monash University's Vice Provost (Research and Research Infrastructure) Professor Ian Smith said that the Amaero-Safran agreement is an excellent example of the University's exceptional research having commercial impact on a global scale.

"I am delighted that Monash is contributing to global innovation and attracting business investment with our world-class research. The Amaero-Safran collaboration is a fabulous example of how universities and industry can link together to translate research into real commercial outcomes," Professor Smith said.

"The new venture is part of Monash University's large-scale investment in innovation on our Clayton campus, which brings together a dynamic cluster of research, research infrastructure and industry partners. Collectively we and our industry collaborators are driving technological change and advancing manufacturing – delivering real social and economic impact."

The world's first 3D printed jet engine was revealed to the world at the 2015 Melbourne International Airshow. As part of a project supported by the Science and Industry Endowment Fund (SIEF) Safran, Monash University and Amaero, in collaboration with Deakin University and the CSIRO, took a Safran gas turbine power unit from a Falcon executive jet, scanned it and created two copies using their customised 3D metal printers. This research is now being extended further through the support of Australian Research Council's (ARC) strategic initiative "Industry Transformation Research Hub" and several industrial partners including Safran and Amaero.

"We proved that our team were world-leaders," said Professor Xinhua Wu, Director of the Monash Centre for Additive Manufacturing. "I'm delighted to see our technology leap from the laboratory to a factory at the heart of Europe's aerospace industry in Toulouse," Professor Wu said.

Amaero will establish a new manufacturing facility on the Safran Power Units site in Toulouse using a 3D printing technology known as Selective Laser Melting. They will not only bring the know-how and intellectual property they've developed in partnership with Monash University, they will also relocate two of the large printers they have customised for this precise manufacturing task.

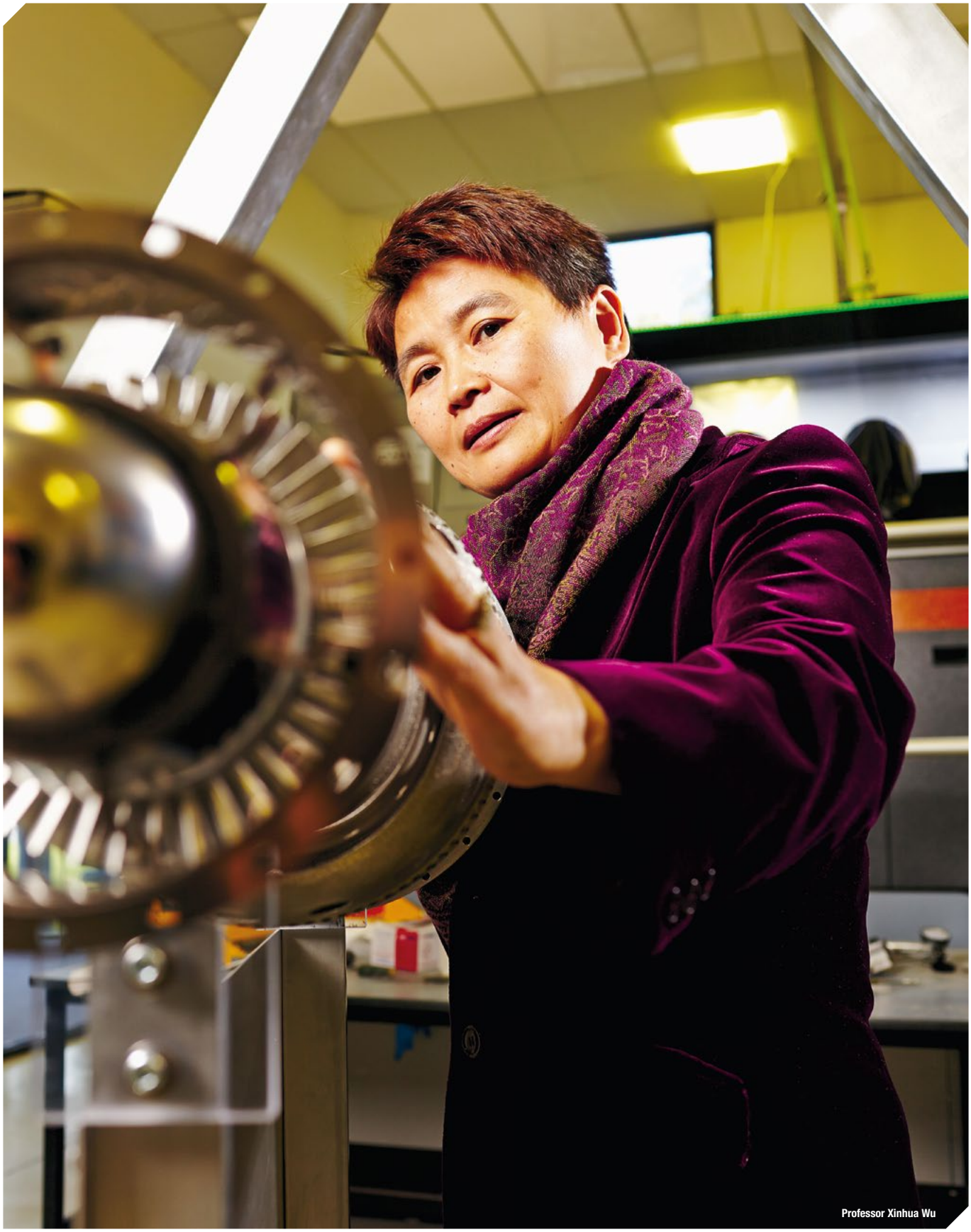
Safran Power Units will test and validate the components the team makes, and then the factory will enter serial production, producing components that Safran Power Units will post process, machine and assemble into auxiliary power units and turbojet engines for commercial and defence use. The project team expect that production will commence in the first quarter of 2017.

The collaborative agreement is between Safran Power Units, Amaero and Monash University.

"Over the past five years, Safran Power Units and Monash University have successfully worked on a demonstration phase. Innovations generated by research and joint collaboration lead us to a new milestone: introducing 3D printing into production stage for major engine parts. We are committed to add tangible value to our products for the benefit of our customers. The stakes are high: weight reduction, huge production cycles shortening and designs innovation. Safran Group advances and our partner leading-edge expertise allow us to stay ahead and to supply the most sophisticated components. This is not just a matter of 3D printing, the 3P rule applies: setting the right parameter for the right part and the right expected performance," declared François Tarel, CEO of Safran Power Units.

The development and commercialisation of this advanced 3D metal printing technology has been supported by Monash University; Safran; and the Australian Government through the Entrepreneur's Programme; the ARC; and other agencies. CSIRO and Deakin University are also participants in the original engine printing project supported by SIEF which continues to provide valuable data and software tools.

"We proved that our team were world-leaders... "I'm delighted to see our technology leap from the laboratory to a factory at the heart of Europe's aerospace industry in Toulouse," Professor Wu said.



Professor Xinhua Wu

They've done it again! UNSW success at Harvard BIOMOD

Team Tiny Trap and mentors celebrate after taking out the Grand Prize at Harvard University's annual biomolecular design competition, BIOMOD. Photo: Lawrence Lee.

A group of UNSW undergraduate students has defeated 24 teams from around the world to take out the top gong at Harvard University's annual biomolecular design competition, BIOMOD.

A student-designed "DNA origami" nanostructure that can deliver drugs to cancer cells more efficiently and effectively has taken out the grand prize at Harvard University's annual biomolecular design competition.

A group of UNSW undergraduate students has defeated 24 teams from around the world to take out the top gong at Harvard University's annual biomolecular design competition, BIOMOD.

The six engineering and science students, known as 'Team Tiny Trap', received the Grand Prize for their research to develop new 'DNA origami' vessels (building structures on the nanoscale using folding DNA) to deliver molecular cargo.

The structures have the potential for more targeted drug delivery to cancer cells to reduce harmful side effects and treatments such as chemotherapy.

The team, the only entrant from Australia and the Southern Hemisphere, also took out four other awards at the competition. They placed first for their project website, presentation and YouTube video and third in the audience choice award.

UNSW has had a respectable strike rate over the three years it has entered BIOMOD, taking out the Grand Prize in 2014 and placing in the Gold Category last year.

Team Tiny Trap was made up of Abi Prakash, Jackson Nexhip, Sabrina Rispin, Ralph Bulanadi, Wendy Chen and Boe Lin.

The team was mentored by Dr Lawrence Lee from UNSW's School of Medical Sciences, along with several of his PhD and honours students from the UNSW EMBL Node for Single Molecule Sciences.

Dr Lee said the competition exposed students to the excitement of innovative scientific research.

"Every year these talented undergraduate students are invariably surprised by the enormous amount of work required to undertake a truly innovative research project, and the intensity required to do so in a very short time frame," said Dr Lee, who is based at the EMBL Node for Single Molecule Science.

"For them to perform so well in these circumstances while juggling their full-time university commitments is a testament to the calibre of students at UNSW. Hopefully we can continue to inspire the best and brightest through these kinds of initiatives."

The team travelled to Harvard thanks to support from UNSW Engineering, UNSW's Science's School of Biotechnology and Biomolecular Sciences, EMBL Australia Single Molecule Science, NSW Trade and Investment and the UNSW student group Arc.

The innovative UNSW research that took first prize

Targeted drug delivery can be broken down into three steps:

1. Loading up a vessel with a molecular payload, such as a drug.
2. Tagging the vessel to allow it to seek a specific target cell.
3. Releasing the drug right where it needs to be.

The first step is the hardest to conquer and the one that Team Tiny Trap focused on for the BIOMOD competition.

Scientists have already designed vessels that can be loaded with molecular drugs to target specific cells and open where they are needed. However, they all rely on attaching the drug to the inside of the vessel – an incredibly difficult process likened to "catching a moth in a matchbox" without the luxury of being able to control when the box opens and closes.

To solve this problem, Team Tiny Trap designed an origami structure that folds strands of DNA into different shapes that can automatically capture molecular cargos using a spring-loaded mechanism like a mouse-trap.

The work not only makes the drug loading and delivery process more efficient, it also provides valuable insight into the mechanical capabilities of spring-loaded nanostructures.

Group of Eight is convener of Global Council

Ms Thomson said that "the message has to be that applied research needs basic research."

In early November in Tokyo the League of European Research Universities (LERU) passed the baton to the Go8 as the 2017 convener of the Global Council of Research Intensive Universities.

The Council comprises the world's leading research intensive universities – which in addition to the Go8 and LERU, includes the prestigious China C9, the US Association of American Universities (AAU), the German U15, Japan's RU11, Canada's U15, and the Association of East Asian Research Universities (AEARU).

Go8 Chief Executive Vicki Thomson told the Council's annual meeting, hosted by Japan's RU11, that "I think we can all agree that in this world where instant gratification looms large across all spheres of our daily lives, we must stand up and volubly support basic research. Bluntly, if we don't, no-one else will."

Ms Thomson said that "the message has to be that applied research needs basic research. They are symbiotic. To even think that the foundation of applied research – basic research – is too ivory tower, too risky, too nebulous, too slow a return in investment is as unjust as it is dangerous to the future of society and to our economies."

The Tokyo annual meeting led to its attendees signing a 'Tokyo Statement' on the need for long and sustainable investment in frontier research.

As 2017 convener, the Go8 will lead a global push for commitment to basic research and the Council's 2017 annual meeting will be held in Brisbane.

China Graduate portal

...the Go8 educates 48 per cent of China's on-shore university students and 52 per cent of the Go8's international students come from China.

The Go8 has sponsored the development and launch of the "Graduate Connect Platform" Australia's first graduate employment portal in China.

The portal will assist Go8 Chinese international students, who return home to work after graduating, begin their careers. It is a partnership between the Go8 and the China-Australia Chamber of Commerce (Austcham).

It enables Austcham members – major Australian and global organisations operating in China – to connect with those Go8 alumni seeking positions who have uploaded their CVs and additional information on the portal.

The portal went live on 14 December and in its preregistration phase from 1 November recorded some 1200 listings from alumni and member companies.

Go8 Chief Executive Vicki Thomson told the launch event in Beijing, attended by Australia's Ambassador to China Her Excellency Ms Jan Adams, that the Go8 educates 48 per cent of China's on-shore university students and 52 per cent of the Go8's international students come from China.

"They are quality students and we want to continue to play a role in their lives. As a group the Go8 has always had a strong connection with its alumni," she said, "so us moving to further assist those who return to China to work is our next step in graduate support, and it is an exciting template we are keen to replicate in other countries. The immediate response in the pre-registration phase of the portal has been a clear indication of just how valuable a project this is."

RESEARCH

From rockets to Nanopatches: inventor receives Florey award

A University of Queensland researcher who invented the Nanopatch – a needle-free vaccine delivery device – has been awarded the 2016 CSL Young Florey Medal.

The award is given in honour of penicillin co-inventor Sir Howard Florey, who in 1945 became Australia's first Nobel Laureate in Medicine.

"It is very humbling and a great honour to receive this award," Professor Kendall said.

"Sir Howard Florey was a hugely inspiring individual. What he accomplished is scientific folklore."

Australian Institute for Bioengineering and Nanotechnology director Professor Alan Rowan congratulated Professor Kendall and said the Nanopatch was destined to improve the health of millions of people worldwide.

"UQ has a strong history of commercialising research findings into practical solutions," Professor Rowan said.

"It's this kind of research that is making UQ a rising star on various research-related international rankings tables, and Brisbane and Queensland a research leader nationally."

Professor Rowan said that traditionally, the need to keep vaccines chilled had made vaccination schemes logistically challenging in remote and disadvantaged areas.

"Vaccines coated onto the Nanopatch do not need to be kept cold, and may require less vaccine for effective immunisation when compared to traditional needle and syringe methods," he said.

AAMRI/Andrew Taylor Photographer

Professor Kendall first completed a PhD in hypervelocity aerodynamics at UQ.

"It didn't seem that I was destined for medicine at all," he said.

"But Oxford University recruited me to work on using aerodynamic principles to fire vaccines into the skin."

This work, with others, led to the development of a "gene gun".

"It's basically a hand-held rocket that uses hypervelocity aerodynamics for the ballistic delivery of vaccine-coated micro-particles into the skin, leading to an improved immunological effect," Professor Kendall said.

He returned to UQ in 2006 and joined the Australian Institute for Bioengineering and Nanotechnology to work on a different concept, using the skin's immune-rich cellular environment as a vaccine delivery target.

"I was eager to overcome one of the gene gun's biggest challenges, which was making it practical for mass vaccination in developing areas of the world," Professor Kendall said.

"It was too expensive and too complex for field use in low-resource regions.

"To resolve this, I mapped the skin's immune system and designed a device from the ground-up that targets immune-rich cells in the skin using microscopic projections. This became the Nanopatch."

Professor Kendall, with his team and collaborators, concurrently explored fundamental science at the interface of engineering, chemistry, biomaterials and immunology.

Along the way, they overcame practical hurdles including inventing ways to precisely coat vaccines on to projections so small that they cannot be seen by the human eye, and finding solutions for large-scale manufacture at low cost.

"Although I'm a trained engineer, my eye was constantly on the biological problem of proving the value of the Nanopatch – does it make vaccines work better than a needle and syringe?" Professor Kendall said.

Studies in animals proved the device was effective, achieving equivalent immune responses as the needle and syringe but using lower doses of vaccine.

The technology took a significant innovation step in 2011 with the formation of Vaxxas Pty Ltd, a start-up company established to commercialise the Nanopatch.

The Nanopatch is undergoing clinical trials, and is being tested in collaboration with the World Health Organisation for vaccination against poliovirus.

AIPS general manager Ms Camille Thomson congratulated Professor Kendall, and said his research had the potential to improve the health of millions of people worldwide.

Professor Mark Kendall ... "Sir Howard Florey was a hugely inspiring individual"

Professor Mark Kendall

"Mark Kendall could transform vaccination, just as Florey transformed the treatment of bacterial diseases," Ms Thomson said.

Two UQ researchers have previously won the CSL Florey Medal, which recognises lifetime achievement in biomedical science: Professor Ian Frazer in 2006 for his work on the Gardasil cervical cancer vaccine, and Professor Perry Bartlett last year for his ground-breaking discoveries in neuroscience.

The CSL Young Florey Medal is awarded to outstanding scientists for significant early career achievements in biomedical science and/or human health advancement, and who have shown excellence and passion in promoting science.

Professor Kendall said the award had a particular resonance for him, because at Oxford he had worked in a building where Florey once worked.

"To resolve this, I mapped the skin's immune system and designed a device from the ground-up that targets immune-rich cells in the skin using microscopic projections. This became the Nanopatch."

School changes to impact uni enrolments

John Black, CEO of Australian Development Strategies and Education Geographics

Only about 45 per cent of year 12 students from Government schools in 2015 said they had a Bachelor degree as their main post-school destination, but the equivalent figure from non-Government year 12 completers was about 63 per cent.

Our company Education Geographics profiles non-Government schools and we currently have about ten per cent of the Australian Independent student market. And what happens in our market affects yours.

From our national research and our individual school profiles we are picking up significant changes to the profile of students at all three sectors which can be traced back to long run cultural changes and to the impact of digital disruption to the jobs and incomes of Non-Government school parents.

These changes will ultimately also impact enrolments at Universities. Indeed, our informal advice is that this is already happening with students preferring Universities in regions where they have the highest chance of securing both a part time job while studying and a full-time job after graduation.

The first point to note in any discussion of the three education sectors is the massive impact of the GFC on growth in market share for the national Independent sector.

When we break these figures down by states we can see that the Year on Year Market share dropped dramatically after the GFC across all states, but the resource states of West Australia and Queensland were the hardest hit, with both states in negative Year on Year growth for market share.

Victoria hit negative Year on Year growth in 2012 and 2013 and has recovered slightly, due to rapid enrolment growth in very low fee Islamic schools.

Despite these post GFC setbacks the Independent school sector has continued to grow market share at a slower rate, but this growth has been restricted to low fee schools which we typically find located in outer suburbs.

The high fee Independent schools located close to CBD have relied on strong population growth and unit developments to maintain enrolment numbers, but high fee Independent schools without population growth have been losing both market share and enrolment numbers.

Across all capital cities, these high fee Independent schools have been losing market share to high SES Government schools, particularly selective or independent Government schools. These changes have driven up the SES scores for the Government sector at the expense of both the Independent sector and the Catholic sector.

Traditionally, the Catholic sector siphoned off market share from both the Independent school sector and the Government sector, whenever Independent fee growth as inferred by Education CPI rose above five per cent.

However, since the wind down of the Australian post GFC stimulus in late 2010, the Government sector – in net terms – has been taking market share from the Catholic sector, irrespective of price.

When it comes to competition between the Catholic sector and the Independent sector, we are finding the two sectors to be virtually interchangeable in the eyes of most parents, but there is still some segregation for lower fee schools.

For example, when we find as many Anglicans as Catholics in any given region, there will be more Anglicans at Independent schools and more Catholics at Catholic schools, as we would expect.

But in the higher fee schools across the same catchment, we find more Anglicans in the higher fee (non-systemic) Catholic schools, but similar numbers of Catholics and Anglicans in high fee Independent schools. Note here we're talking about Catholic persons, rather than males or females.

To get a better understanding of the economic and gender-based factors at work here we charted ICSEA scores over school fees for both Catholic and Independent schools and we found that both Catholic sector and Independent sector ICSEA scores rose as fees increased and the two lines continually overlapped each other.

This means Catholic schools and Independent schools of a given ICSEA score charge similar fees and the two sectors have become interchangeable for parents focussed on price and parental peer groups.

To sum up the evidence so far, the GFC has flattened out the long-term growth of market share for the Independent Sector. This has been most strongly felt by high fee Independent schools and the biggest winner has been high SES or selective Government schools. Inner urban population growth and bigger catchments have protected CBD based high fee Independent schools to a certain extent, but in lower growth outer suburbs, many of the high fee Independent schools are struggling to maintain student numbers.

However, the lower fee Independent schools in the

This means Catholic schools and Independent schools of a given ICSEA score charge similar fees and the two sectors have become interchangeable for parents focussed on price and parental peer groups.

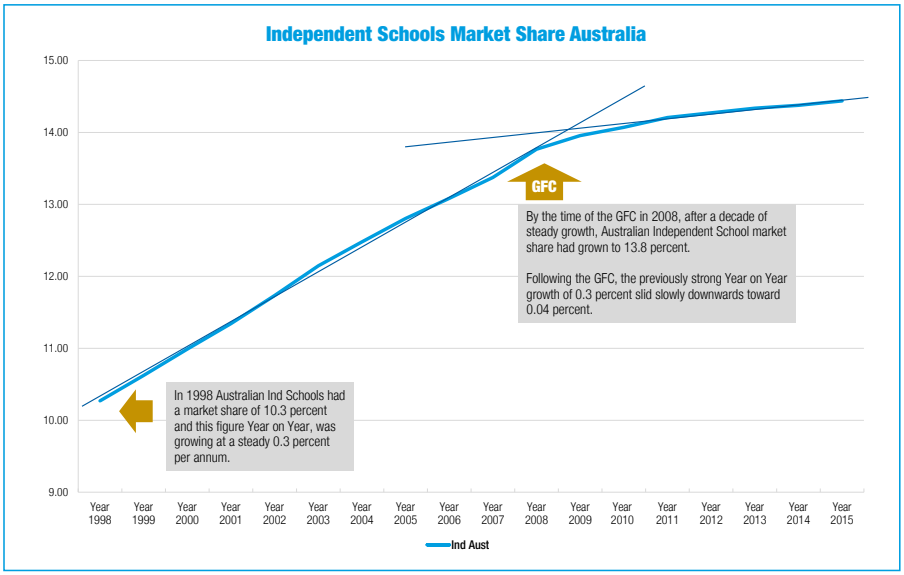
outer blue collar suburbs have continued to gain enrolment numbers and market share at the expense of both State schools and local high fee Independent schools.

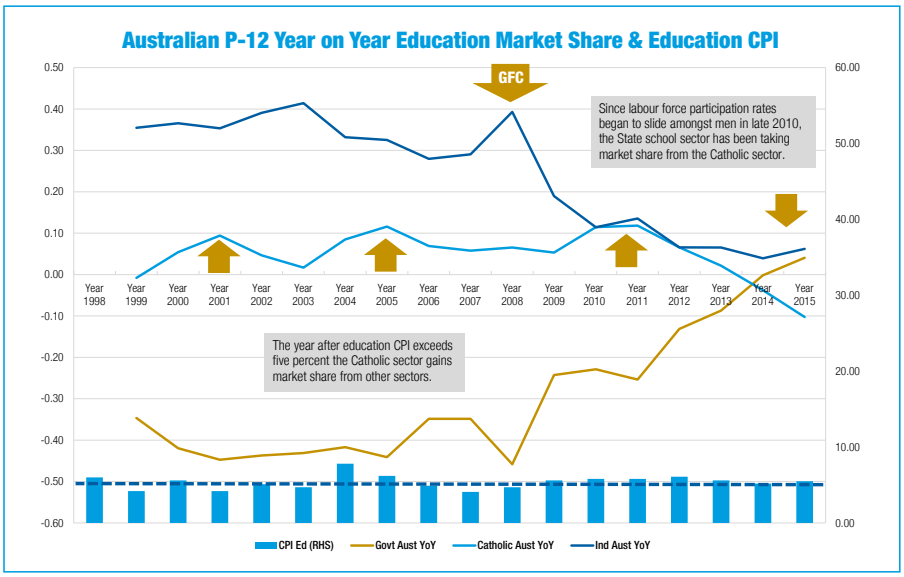
The Catholic sector has been losing national market share since 2011 and shows no sign of recovery. At the moment, most of these net enrolment losses appear to have been to the Government sector, but the Catholic sector is now also vulnerable to low fee competition from the Independent sector, as traditional religious boundaries become blurred.

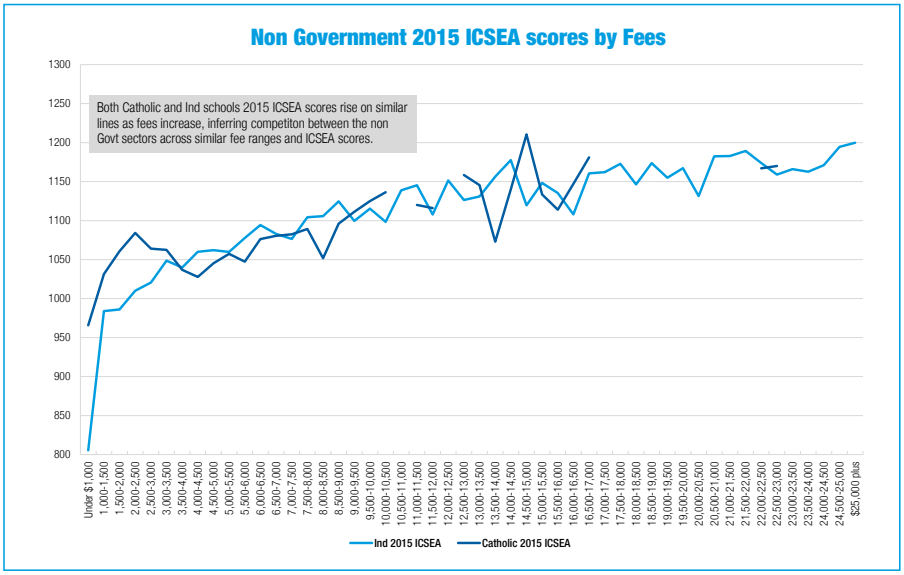
We have not had enough data to be confidence of the implications of these trends for the Tertiary Education sector but I think (see below) we may see a drop in University enrolments from suburban Catholic and Independent schools and a rise in interest from high SES Government or selective schools.

For culprits of change we found a number of suspects.

Strong support was shown for the Independent sector at the 2011 Census from suburbs with high numbers of male and female managers and professionals and female clerical and admin workers. We know from our profiles of individual schools that female clerical workers, especially part time ones, provide large numbers of students for Independent schools. But to do this, they need a job.







School changes to impact uni enrolments *continued*

Research from the Committee for Economic Development of Australia replicated from overseas studies shows that – while managers and professionals were safe from digital disruption – the female clerks were not and this is a major threat to higher fee Independent schools in middle class suburbs now being squeezed by a stagnant private sector job market and declining real per capita incomes.

Our own research shows the jobs deemed to be under high risk of disappearing due to technological change are in fact frozen in terms of raw numbers, as the rest of the labour market grows around them. And, while the raw numbers may be unchanged, many formerly full time jobs are being swapped for part time employment.

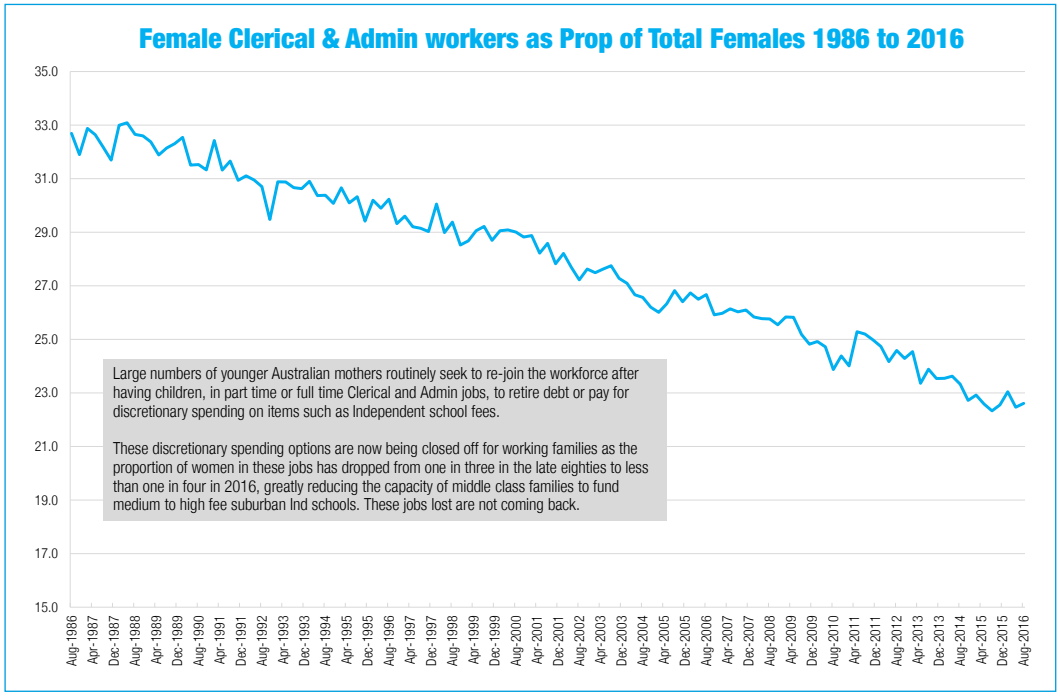
The high-risk jobs include clerks and tradesmen – the traditional working families. There are about 3.4 million tradespersons and clerks across all Australian suburbs and they comprise about 29 per cent of all Australian workers.

We know from our profiles that they also make up to **23 per cent of all Independent school parents**, ranging from 18 per cent for very high fee schools, up to 27 per cent for very low fee Christian schools.

Principals of higher fee schools may not see these parents picking up their kids or at board meetings, but if this group sneezes, the Independent sector catches a nasty cold.

And, in time, so will the domestic Tertiary Education market. Our informal advice from the Tertiary sector is that students from particularly depressed job markets, such as north Queensland are now choosing to study in labour market regions closer to major cities where they have more chance of a part time job during their studies and a full-time job when they've finished their degree.

So the economic pressures forcing parents to choose cheaper education alternatives for their children in some regions are also likely to impact the Tertiary education choices for their children.



Our research shows major changes in the public sector/ private sector split between occupations which is also having an impact on the three school education sectors.

Public Admin workers tend to send their children to Government or Catholic schools, whereas the Independent sector relies more on the private sector, particularly self-employed managers or private sector professionals, boosted by women in part time senior admin or clerical jobs.

Managers have lost 44,500 jobs in past two years, with all these losses in the private sector. There have been 179,300 Professional jobs created in past two years, but 78,100 (43.5 per cent) of these were in the public sector, instead of one in four. For Clerical and Admin workers, there have 52,700 jobs created, but 53,500 were men, who don't support Independent schools, and the number of female clerks dropped.

Of the 303,700 jobs created in the past two years, 127,900 or 42.1 per cent have been in the public sector, instead of the long run average of one in eight. The strong recovery shown in the last two years by the labour market has been based on the hiring of additional public servants, rather than on any growth in the private sector jobs market.

In other words, the labour market base of support for the Independent sector is shrinking, but growing for the Government sector, especially in higher SES

When it comes to competition between the Catholic sector and the Independent sector, we are finding the two sectors to be virtually interchangeable in the eyes of most parents, but there is still some segregation for lower fee schools.

suburbs, typically closer to their CBD based jobs.

The Catholic sector has also been profoundly impacted by long term changes in education and employment for Catholic mothers.

Our research shows that Between Census 2001 and 2011, among Australian women living in a relationship, the proportion of Catholic women with degrees has grown from 14.5 per cent to 23.2 per cent and the proportion of Catholic women with Diplomas or Certificates has grown from 17.5 per cent to 24.7 per cent.

Gen X Catholic mums are now indistinguishable from non-Catholic Gen professional mums. They're not running the front desk any more at suburban doctor's surgeries, law offices or accounting firms. They are now just as likely to be found in the back offices as doctors, lawyers and accountants.

And these additional Gen X Catholic mums who have attended universities are much more likely to marry and start families with the men they met while students. In a delightful bureaucratic phrase, the US Bureau of Economic Research called this trend "positive assortative mating".

Between 2001 and 2011, the second biggest increase in marriage by religion and qualifications of 250 per cent has been among female Catholic professional women marrying agnostic men. And what's happening to the Catholic men left over from this trend?

Well, they're in on it too. The biggest proportionate increase in marriage by religion and qualifications of 270 per cent between 2001 and 2011 was among agnostic professional women marrying Catholic men.

This trend at the margins has already had an impact on total numbers. Between Census 2001 and Census 2011 the proportion of Catholics partnering with Catholics has fallen from 58.5 per cent to 56 per cent.

So, where do their kids go to School?

The answer to this question is one I'm saving for my paying school clients but there are some definite conclusions I can share with you:

Parents still, as always, aspire to the best education they can afford for their children.

They know the SES of their class cohort is a key driver of academic outcomes.

So they choose the highest SES school they can afford and they now take into account the cost of real estate, pushing the price of some houses up near high SES or selective Govt schools.

This means we now have an increasingly porous marketplace across all three sectors, with parents chasing the lowest price for combined fees and housing for the highest SES score.

If the family loses one source of income, then they will trade down to a cheaper school in a staged manner.

These sorts of pressures are making some higher fee schools unsustainable in outer suburban areas with stagnant participation rates, unless they can benefit from strong population growth or innovative marketing and transport initiatives.

In the longer term the same pressures may reduce University enrolments from the same areas, especially in depressed regions such as North Queensland.

In the wealthier inner city areas, we are seeing more examples of negatively geared parents who appear to be relying on capital gains or tax incentives to support school fees, making these schools vulnerable to the popping of the property bubble.

We may see less interest in a University education from the children of these parents in per capita terms, especially if there is a collapse in the property market for inner urban units, which, frankly, seems just a matter of time.

Again, I stress our evidence is currently scanty for the Tertiary sector, but I think it is reasonable to assume a University degree is the main aim of the increasing number of students at both high SES Government schools in the inner suburbs and selective Government schools generally.

So, we can expect the GFC and longer term cultural trends to play out in the domestic Tertiary market for students over time. We'll have a better idea when we've profiled our first few Universities, but for now, we're flat out handling ten per cent of the Independent school sector.

John Black is a former Labor Senator for Queensland and now CEO of Australian Development Strategies and Education Geographics and his election profiles and maps can be found at www.elaborate.net.au

What now for the demand driven system

Mark Burford

I had the good fortune to work with Julia Gillard in the early days of the Rudd Government and later as a consultant to the government. The Bradley Review of Higher Education was central to that government's policies and its signature reform of freeing up university places through the demand driven system is now seen as a great achievement of that period.

The demand driven system was of a piece with growth oriented policies stretching from Menzies, through Whitlam, to Dawkins, and a logical extension of the choice oriented approach of the Kemp period. But even as changes were being implemented it was clear that there was more to do. Now, after years of inertia the gaps in the policy mix are more exposed. These gaps are a policy opportunity for the Government and Opposition.

Some have asked of the Gillard period in higher education, "what could have been done differently?". I prefer to get at the same problems by asking, "what should we do now?". 20/20 hindsight always shows that no policy package is complete. The trick is to find a system-shifting change and work from there. The demand driven system was one of these. John Dawkins "unified national system" underpinned by growth and fair student contributions was another. And Menzies established the fundamentals of our university system when he massively expanded Commonwealth involvement.

Announcing the Review, Julia Gillard set "a new long-term goal for our post-secondary education system: guaranteed access to higher education or skills training for every young Australian with the talent and willingness to give it a go"[3].

Lets look at some numbers[1]:

- Between 2009 and 2015 undergraduate enrolments in Table A higher education providers grew from 553,374 to 717,195, an increase of 163,821 or 34.7%.
- Low SES enrolments grew by from 90,447 to 130,246 in the same period, a growth of 39,799 or 50.4%. There was particularly strong growth in indigenous and disabled student enrolments, albeit from a low base.
- Faster than across-the-board growth saw the proportion of low SES enrolments grow from 16.3% in 2009 to 18.2% in 2015.

Many young Australians gained an opportunity that would have been denied in the past and we will achieve the target of 40% of 25–34 year olds having a degree. We should not retreat from this level of participation. However, the growth in low SES participation is not nearly enough and leaves us short of the 20% participation target set post-Bradley. And we have distorted the balance of tertiary education, with strong undergraduate degree growth accompanied by a fall in government subsidised vocational education participation, including at the important Diploma and Advanced Diploma levels[2]. System design, funding, student loan support and regulation skew supply and choices away from VET toward degree level study, (except in the case of the poorly designed VET FEE HELP scheme, a shambles too big to go into here).

The post-Bradley reforms aimed to set a new tone. The vision was to take another step towards mass tertiary education. Announcing the Review, Julia Gillard set "a new long-term goal for our post-secondary education system: guaranteed access to higher education or skills training for every young Australian with the talent and willingness to give it a go"[3]. The Review's terms of reference asked it to consider "the place of higher education in the broader tertiary education sector"[4]. The idea was not just about university education.

While equity was key for the demand driven system this was in a broader context to:

- Grow the system for all;
- Support economic growth;
- Enable more to gain the knowledge and skills needed for the new economy;
- Expose universities more keenly to the pressure of student demand; and
- Free institutions from unnecessary regulation and micromanagement.

1 Koshy, P (2016) *Student Equity Performance in Australian Higher Education: 2008 to 2015*, National Centre for Student Equity in Higher Education, Curtin University, Perth pp.4–6

2 NCVER (2016) *Australian vocational education and training statistics: government-funded students and courses 2015*, NCVER, Adelaide; & Noonan, P. (2016) *A new system for financing Australian tertiary education*, Mitchell Institute at Victoria University, Melbourne

3 Hon Julia Gillard MP (2008) *A Higher Education Revolution: Creating a Productive, Prosperous, Modern Australia*, speech to the Australian Financial Review Higher Education Conference, 13 March 2008

4 Bradley, D. et al (2008) *Review of Australian Higher Education Final Report, Commonwealth of Australia*, Canberra, p. 208

The demand driven system was also part of a package of reforms that included among other things a targeted equity program through the Higher Education Participation and Partnerships Program (HEPPP), better regulation and Commonwealth growth funding for VET. In tandem were substantial national school and early childhood education reforms, where arguably the biggest equity gains are found[5].

And even within tertiary education, only so much can be done through system-wide settings. Widening access and supporting student finances are essential, but institutional level reforms to enable students to enter, help them succeed and transition to work or further study must be built on that platform.

Picking up on its tertiary term of reference the Review said "moving to a demand-based approach to funding higher education cannot be done in isolation from VET. Changing higher education funding but leaving VET funding untouched would compound existing distortions." The Review then went on to note that the OECD had recommended an entitlement funding model for VET and higher education, supported by consistent funding arrangements across sectors and a common income contingent loans scheme[6]. The Review itself recommended funding higher level VET through the same arrangements as higher education.

Neglecting these ideas turned out to be the biggest failure in the Commonwealth's tertiary education policies and it continues today with higher education and vocational education policies running on two unconnected tracks. We have got precisely the result that the Bradley Committee foreshadowed.

So, while the demand driven system gave us breakthrough change it has come at a financial cost that is hard to sustain, and we have achieved only partial reform and created distortions in tertiary education. Three governments have left the business unfinished.

5 See Fox, S. & Geddes, M (2016) *Preschool – Two Years are Better Than One*, Mitchell Institute at Victoria University, Melbourne

6 Bradley, D. (2008) p. 185

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So, while the demand driven system gave us breakthrough change it has come at a financial cost that is hard to sustain, and we have achieved only partial reform and created distortions in tertiary education. Three governments have left the business unfinished.

The Abbott Government's Federation White Paper process, now abandoned by Prime Minister Turnbull, floated many good reform ideas. Peter Noonan (a member of the Bradley Committee) Mark Warburton and recently Michael Spence[7] have all set out the main lines of a connected, open and better financed tertiary sector.

What should we do now? This is by no means a full agenda – that would need to cover student financing, research funding, regulation, entry standards and more – but a lot could be achieved by reforms like the following:

- Embrace the interconnected tertiary sector and re-build VET, including TAFE. Re-envision the promise of the demand driven system from one of a degree place for all to one of a tertiary opportunity – higher education and vocational education and training – for all who are able and who are willing to give it a go;
- Have another go at sorting out Commonwealth and State roles. The Commonwealth should take on the States in hard way to do this and utilise its funding power to do so – either by requiring the States to meet agreed funding and delivery targets, or more preferably by shifting public funding responsibility for all programs above Certificate 4 level to the Commonwealth;
- Establish clear, well-costed and simple subsidies for all tertiary programs including degrees, associate degrees, advanced diploma and diplomas. Sub-degree programs will be at lower cost;
- In parallel establish a set of clear student contributions with a single system of income contingent loans for all subsidised post school programs. Fee deregulation should be put aside, although some monitored fee variability should be considered;
- Ensure complementary equity programs, including a strengthened HEPPP and a mix of both system-wide and institution-based scholarships;
- Set up new governance and regulatory arrangements to underpin the whole thing.

All these things could and probably should have been done at the time the demand driven system was introduced. The Government and the Opposition should agree to do them now.

7 Warburton, M. (2016) *Resourcing Australia's Tertiary Education Sector*, LH Martin Institute, Melbourne; and Michael Spence (2016) "Key principles for higher education funding reform", *The Australian* 23 November 2016