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Official Committee Hansard

**HOUSE OF  
REPRESENTATIVES**

STANDING COMMITTEE ON INDUSTRY, SCIENCE AND  
INNOVATION

**Reference: Research training and workforce issues in Australian universities**

MONDAY, 18 AUGUST 2008

BRISBANE

BY AUTHORITY OF THE HOUSE OF REPRESENTATIVES



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**HOUSE OF REPRESENTATIVES**  
**STANDING COMMITTEE ON INDUSTRY, SCIENCE AND INNOVATION**

**Monday, 18 August 2008**

**Members:** Ms Vamvakinou (*Chair*), Fran Bailey (*Deputy Chair*), Mr Bidgood, Mr Champion, Mr Cheeseman, Dr Jensen, Mr Johnson, Mr Ramsey, Ms Rishworth, Mr Symon

**Members in attendance:** Fran Bailey, Dr Jensen, Mr Ramsey, Mr Symon, Ms Vamvakinou

**Terms of reference for the inquiry:**

To inquire into and report on:

1. The contribution that Australian universities make to research in Australia, including:

- The contribution of research training programs to Australia's competitiveness in the areas of science, research and innovation;
- The effectiveness of current Commonwealth research training schemes; and
- The adequacy of current research training schemes to support Australia's anticipated future requirements for tertiary-qualified professionals in a wide range of disciplines.

2. The challenges Australian universities face in training, recruiting and retaining high quality research graduates and staff, including, but not limited to:

- Adequacy of training and support (including income support) available to research graduates in Australia;
- Factors for graduates that determine pursuit of a career in research;
- Opportunities for career advancement for research graduates and staff;
- Factors determining pursuit of research opportunities overseas;
- Australia's ability to compete internationally for high quality researchers; and
- Whether Australia's academic workforce is ageing, and the impact this may have on Australia's research capacity.

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**Committee met at 9.01 am****BAKER, Professor Graham, Deputy Vice-Chancellor (Scholarship), University of Southern Queensland**

**ACTING CHAIR (Fran Bailey)**—I declare open this public hearing for the inquiry into research training in Australia being conducted by the House of Representatives Standing Committee on Industry, Science and Innovation. The inquiry arises from a request to this committee by Senator the Hon. Kim Carr, the federal Minister for Innovation, Industry, Science and Research. Written submissions were called for, and 104 submissions have been received to date. The committee is now conducting a program of public hearings and inspections. This hearing is the seventh for this inquiry.

I now call the representative of the University of Southern Queensland to give evidence. Do you have anything to say about the capacity in which you appear before this committee?

**Prof. Baker**—My role at the University of Southern Queensland is as Deputy Vice-Chancellor (Scholarship), which in our university means that my portfolio covers all of the academic faculties and, specifically, the research and innovation portfolio for the university.

**ACTING CHAIR**—Thank you. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. We thank you for your submission. You are now welcome to make a brief opening statement before we proceed to questions.

**Prof. Baker**—Thank you. My understanding is that I do not need to make a long statement. In fact, I would refer simply to the submission we put before Minister Carr. I suppose I would just, in summary, stress a couple of points that we believe are particularly significant. One is the level of opportunity afforded to incoming graduate students—that is to say, the environment in which we now work is incredibly competitive not only between institutions but for labour, as with many other areas, and therefore, given that universities wish to attract, shall we say, the brightest minds into research schools, at the salary or scholarship level we can offer it is becoming very difficult indeed. In professional areas particularly, not just because of the resources boom, the salary levels that those very bright graduates can attract at 21 years of age so far outstrip our scholarship levels that it is becoming incredibly difficult. The issue for us, then, is not just the impact on research but the longer term impact that has on, if you like, the labour pool for universities themselves. That, for us, is probably one of the major issues. With that simple summary point, I will defer to questions.

**ACTING CHAIR**—Thank you. Already, as I have indicated, this is the seventh public hearing, and we have been getting a number of, if you like, common threads coming through the inquiry. You have already indicated some of those, but I was wondering if, perhaps, you believe that you face particular disadvantages in comparison to metropolitan campuses because of the regional nature of your university.

**Prof. Baker**—Possibly. My personal view is the disadvantage is not so much the regionality but rather the research landscape itself. We believe strongly—if we believe our own view of our own university's capacity—we have very strong research capability in a number of areas we have chosen to focus on. In those areas we would hope to build research student numbers to the same proportional levels of any other university. There is the issue of competitiveness in the sector, which may give the impression that regional universities simply do not do as much research. They do not in absolute volume, but in certain areas where we believe we are as good it should be as easy to attract. It is more about that factor than about the regionality itself. For example, our university is very strong in areas that are currently very, very important on the national stage—climate change adaptation and those sorts of areas, as well as agriculture and energy resources. People interested in those fields are not at all concerned about working in regions—that goes with the territory. But it is perhaps a general perception of research activity rather than regionality.

**Dr JENSEN**—Yours is a very interesting submission. As the acting chair was saying, we are finding common themes in the submissions. The major one that you have highlighted is the fact that the APA is inadequate. But, apart from issues of the pay structure for postgrad students, if you could change one other thing to attract research students into conducting postgrad research what would it be?

**Prof. Baker**—I am an academic—I can think of two! There is one that I know the government is already looking to—that is, freeing up the schemes to allow more international students. We would be very supportive of that. In a sense that is a pragmatic answer to your question. It does not actually address the attractiveness for domestic students, but pragmatically it gets more people into the system. It is not my role to discuss immigration issues, but nonetheless I would have hoped in addition to providing very fertile minds to the research sector those international people would then choose to seek citizenship in this country. They would be very, very skilled people, trained by Australians. Therefore, I would hope that that would be seen as a very positive element as well. I think that driver is really quite a good one.

The other issue—pardon me, I am giving two answers—is that the review asked for commentary on the adequacy of funding schemes and various structures apart from salary type structures. I know many people have talked about the level of funding, so I will not talk about that too much. But on the issue of the research training scheme, which we all support in principle—well, I believe we would all support it in principle—it is not obvious that the level of funding there is sufficient to support the infrastructure and the supervision to give the academic staff time to support students. Therefore, one of the areas where we would probably fall behind compared with our international competitors, particularly Europe and the US, is in whether we are seen by students to be able to provide enough support and infrastructure for them. It is probably difficult to make an analysis to tell you that an X per cent increase could solve that problem. In all honesty I would not have that analysis, other than the global indicators you would be aware of about comparison with the OECD. So that probably is an issue. In terms of the quality of the work, it certainly is a looming problem. Whether it would change the attractiveness to domestic students is not as clear. Going back to my earlier answer, I think the move to open up the systems to well-qualified international graduate students is a very positive one.

**Dr JENSEN**—What about the issue of funding from another side—that being, say, block funding versus ARC, NHMRC type funding? How much of a problem is the ARC, NHMRC type funding causing in terms of both research activity and researchers taking on postgrad students?

**Prof. Baker**—I am not sure why you would see it as a problem. There is one issue. Winning ARC grants is one thing; finding people—you have grant applications with staff mentioned in the budget—to come along to fill them is a national problem. It comes back to the salary areas for PhDs and even research assistants, particularly in those professional areas which are paying very well. That is an issue. If that is what you meant by a problem, I have the same answer—

**Dr JENSEN**—That is one of the issues. Another is the types of areas that will be researched. In effect, to get an ARC type grant, the grant application will almost of necessity be somewhat conservative in the type of project that is undertaken.

**Prof. Baker**—Yes. I have worked with the ARC, as most senior academics do, chairing their panels et cetera, so I am a great supporter in many ways. But there are a couple of, if you like, issues which become ingrained in the ARC, such as the perception of what is good quality research and, therefore, what research is actually rewarded with grant money. It does become a bit of a self-fulfilling prophecy. There may be certain areas that are on the outer. They are not deliberately so; it is just the way the review schemes work. That may be possible. Creative arts has traditionally been highlighted as one area that has difficulties.

The bigger problem for a university like mine and which may be a regional issue is that ARC and NHMRC are not the only funding sources but they are often the only ones that are looked at. Many of the large, federally funded research development corporations—grains research, for example, is an enormous funder of research in plant sciences et cetera in a university like mine—rarely get the same credibility for the work that follows from those corporate funds. There are many industry funded schemes—in areas like engineering, particularly—where we have industry funding research. That seems not to carry the same kudos, and that itself is a real problem. I am referring to another submission that was made under the broader innovation scheme, and the notion that competitive and peer funded research should be seen as the major metric for quality is, in my view, incredibly flawed. It will drive all universities towards the same behaviour. They will all go charging towards the one corral called ARC, and yet there are quite legitimate and quite relevant funding sources elsewhere. I would hope they would all be regarded in the same light. It is the quality of work that comes out of the money that is more important than the source of the money in the first place, but there is something of an institutional—and by that I mean sector wide—bias towards ARC and NHMRC, and I feel that is wrong.

**Dr JENSEN**—I ask that because one of the ones that I like putting up is Warren and Marshall's work on ulcers. Undoubtedly it would not have been funded by ARC because it would have been seen as so far out of left field. That is part of what I am trying to get at with this question. That is the element where the grant applications that are put in are inherently conservative; you know you are going to be able to achieve a certain deliverable in a certain period of time and there is just about no risk associated with it.

**Prof. Baker**—You are absolutely correct. It comes about, in some ways ironically, because of an issue or policy that is very hard not to support: the scale and focus argument. The ARC and NHMRC—I have much more experience with the ARC—would argue that, if you find a group of people who are doing good work and you can see that that good work is ongoing, then why not fund it? In the sense of value for money, they continue to produce good work. The scale and focus argument is extremely important. But those people then tend to become the ones who get on panels making assessments and they tend, therefore, only to see that kind of work. They also are those who have such a momentum going that they are doing the work before the application is submitted—which is precisely your point. A conservatism in that sense is that the applications are actually very small advances; Everest is a small peak on top of a large range. It is that particular issue.

If somebody comes along with a radically good idea, if they do not have the right kind of background and track record with ARC, they have no hope. You must have at least a track record as a researcher, and preferably one with ARC, to win ARC money. In that sense it drives conservatism. That is not to say the work that comes out of those funding schemes is not of itself good. But it may be inhibiting other good things that never get started. Those who go into other funding sources, such as Marshall and Co., the Grains Research and Development Corporation et cetera, need to be respected, as do those funding sources, in my opinion.

**Dr JENSEN**—Thank you.

**Mr RAMSEY**—I would like to follow up on that because I am a bit disturbed by it. I think this is the first time we have heard it. Are you saying that it is not the area people are working in but the area that their funding is coming from which predetermines people's opinions towards the value of the research?

**ACTING CHAIR**—It is if someone has a reputation in a particular area, isn't it?

**Prof. Baker**—It is a little of both. If you look, for example, to the current proposed metrics under the new ERA scheme, the scheme to assess research—pardon me if I am straying outside the bounds of your inquiry—you will see that all of the metrics are quite traditional. One of those which are really critical is the research income. Currently our block funds from DEEWR are essentially calculated on research income that a university attracts, as a measure of quality—although one might say that is an input and not an output—as well as publications and higher degree student completions. Put very simply, in multiple formats those derive our block funding in a formulaic sense, but research income is the dominant one. It is worth about 60 per cent as a factor. Therefore, if one is in a university—and clearly we have to maximise our own returns and we want to maximise our block funding; it is a business in that sense—research income becomes the critical factor. It is the driving force in most research in Australia.

The one metric proposed under ERA, although it may change because it is at review stage, was peer reviewed research income—that is, ARC and NHMRC. In other words, they would become the two most important factors in determining the appearance of research quality and ERA measurements and, no doubt, the block funding that would ensue. Some years ago it was only the competitive grants that were counted under block funds. Then the federal government moved towards making it all research income on an equal basis. If it retreats from that and goes back to the competitive peer review, that would be a very damaging move indeed. That is the

funding source. I was also making the separate comment that those people who build a track record within those schemes tend to get on a roll. But they are by and large pretty good people. I would not want to suggest that people who are not good researchers are being wrongly funded—not at all.

**ACTING CHAIR**—It is a difficult one, especially if we want to encourage innovation, isn't it?

**Prof. Baker**—Indeed. Again, in the broader innovation review, we made commentary that—and this is a regional university comment—regional universities have, and are required in my view to have, a very strong relationship with their communities. We, therefore, would be working with a lot of SMEs or local businesses. Those companies are not in a position to invest money in research, so what is the incentive for a regional university to work with them? Yet there should be a close relationship in an innovation sense to drive local Australian economies. There are many downsides. I do not wish to overstate them, but all of our funding schemes produce a 'one size fits all' university. They do not lead towards diversity because everybody works to maximise their returns under the funding schemes that are available. That it is quite natural. The dominant effect of research income on the block funding is really very noticeable, and if it were only to be the competitive sources that would be very damaging, in my opinion.

**ACTING CHAIR**—Do you have another question?

**Mr RAMSEY**—Yes, it got a bit off track there.

**Prof. Baker**—I am sorry.

**Mr RAMSEY**—That is all right—it was very interesting. My greatest exposure to the university system has been through the agriculture research area, so I was quite interested in what you had to say about it. You say in your submission that there is a lot of confusion concerning the funding schemes for international students. Why is that?

**Prof. Baker**—I would say it is a government confusion more at the level of the individual. We have got to a point where there are many small pockets. Our view is that it could be simplified greatly, as in the move to say that scholarships under ARC money, as Minister Carr was seeking to do, would be open for internationals. Simplicity in that sense would be very desirable. Students apply for everything they can see but are not aware of the subtle differences between them or whether they are duplicating.

**Mr RAMSEY**—So there are too many little buckets of money.

**Prof. Baker**—Yes, too many little buckets. I think there needs to be a simplification. I am not saying it would do us more good, but I think it would probably take some heat out of the administrative system. That is a commentary that came, not surprisingly, from my office of research, which administers most of those schemes and spends a lot of time advising people on these small buckets really for very little return. They almost say, 'Just apply for the scholarship. We will assess you.' That would be the simple message.

**Mr SYMON**—I would like to explore the regional perspective a little more. You call in your submission for a scheme to push regional universities a little more to attract especially overseas students who you say, because of social and employment reasons, are not necessarily going to look at a regional university. They will look at capital cities because maybe that is where their friends are or they have family there. They may leave a university like your own one off their board, as it were. What type of scheme do you think would cause international students to rethink their views of regional universities?

**Prof. Baker**—In my earlier comment about regionality I was speaking more about the domestic rather than the international, so if it sounds like a contradiction, I apologise. I think the scheme would be at the research level itself in order to drive those pockets of excellence to ensure that work that is being done is quite clearly world-class and therefore would be a natural attractor. As I alluded to earlier, we have focused on a number of areas. In those areas where we are doing very well we are attracting a lot of international interest. What tips the balance I think is if they come and feel that they get the absolute best support. Then they will go on to a career that is very strong and useful to them.

I do not think a scheme can resolve the social side. It is an interesting dynamic. We did not put it down, but we observe at the undergraduate level that there is a lot of interest from students to work in metropolitan areas because they presume there is more part-time work. A lot of the more mature students are more comfortable about working absolutely anywhere, and that is quite important. It does depend a little bit on whether there is a cohort in the regional area for them to follow. In the international area I think that is quite important.

Parents of certain cultures around the world sending their youngsters overseas to study prefer the regional areas because they regard it as more secure and socially more palatable to their own cultural background, shall I say. So it is quite a mixed picture. I would not like to say that all internationals want to go to metropolitan areas and not to regional areas. The real issue is simply being able to recognise excellence where it is and getting the appropriate support to drive that excellence.

**Mr SYMON**—Staying on international students, further on in your submission you talk about the volatility of the Australian dollar and how it affects pay rates for internationals. Are you suggesting there that it would be better if we paid in their local currency so we got rid of that volatility?

**Prof. Baker**—That may have been poorly worded, I apologise. As much as anything it is the fees that they pay and that applies whether it is the undergraduate full-fee-paying student or the post-graduate student. We are asking \$20,000 a year from PhD engineering students. That amount varies around the country—it is a market force thing that is driven by the university. That is quite a lot of money. Depending on the exchange rate, the person's bank balance back home can vary enormously. I am not sure that that is one that one could ask the federal government to resolve in any sense.

We have real challenges to figure out whether we charge in local currency or in Australian currency. The Australian currency is about the most stable and the only thing we can do, but it has quite an effect. Where it also has an effect is in the postgraduate market. That is a volatile market because those students are very price sensitive—they are often paying out of their own

pockets. They have graduated, they are working, they have families and they will look around the world. So the effect is whether they come to Australia or whether they go to Germany, not whether they come to the University of Southern Queensland versus Melbourne. There is volatility in that sense. It would be nice—and I do not have a proposal, as it were, or detail to put before you—to recognise, as the Productivity Commission has done, the value of R&D to the Australian economy, given that international education is now the third largest export industry, and couple those things together. Some ameliorating effect would be very well received, whether that be through, as we have been saying, offering scholarships to international students or recognising some difference to the fees—some support. If I sound a little analytical then pardon me, but, if the value of the sector to the economy could be shown, then it would be very helpful indeed if some proportion of that could come back to support international education at universities so that the university could charge smaller fees. But I do not think we could ask you to resolve the exchange rate issue for us!

**ACTING CHAIR**—Unfortunately, Treasury never favours hypothecation, do they?

**Prof. Baker**—But then, I am from a university.

**ACTING CHAIR**—We are very aware, of course, of the ageing of the academic workforce. Could I seek your views on how you are finding this at your university? What ideas do you have that you might want to put forward to us about encouraging especially our PhD students to continue as part of that core academic research area?

**Prof. Baker**—Over the next five years or so that will hit us very, very hard. At the moment our human resources departments can show us figures on the shrinking labour pool for universities by the number of people who apply for positions. It is going to become a major problem in the not too distant future. At the moment we are getting by in the sense that there are sufficient people applying for academic posts for us to fill them, but the number and quality is shrinking alarmingly and that is a real worry for us. I will come back to my opening statement: it starts at the graduate level, and you can map academic salaries against salaries in the broader community—and it is easier to trace the professional ones. The difficulty is that we would like the most talented to stay on and choose research and innovation.

I do not want this to sound flippant because it is very serious: in engineering, medicine, nursing or any of those allied health areas, we ask people to have a good honours degree, to take three years of PhD on a very small scholarship, to preferably get a couple of years professional experience and then at the age of 26 or 27 to take an academic post on less than they would have earned at 21 had they gone straight into industry. The average level B salary—the career grade of level B and level C—is less than engineers earn when they graduate, especially if they go into the resources sectors; they are already overtaken. We are therefore already relying on those people who simply have a personal passion for teaching and research, and that cannot last. We notice that already even in other parts of the education sector—schools, for example. The relative changes are not on parity; they are higher. In a number of the publicly funded research agencies, the salary gains are such that universities are going to be left behind in encouraging those people I described into research careers. The larger corporations, the multinationals that have big R&D groups, can certainly pay far more.

I am sorry to concentrate on salaries, but at some point that is certainly going to determine people's keenness in a global market pool—not for the individual but in a global market pool—and it is going to hit us very hard in a few years time. We are already seeing the pool drying up. There is intense competition between universities. So as not to make it sound like my own problem, I am aware of colleagues in metropolitan universities advertising engineering positions, failing to recruit at all and having to pay huge market loadings. That traces back, of course, to the issues that many people before you have probably talked about—the amount of funding in the system; whether the block fundings, if they are earmarked for research only, are sufficient; whether the Commonwealth Grant Scheme is sufficient; whether we have the balance right between, on the one hand, the number of students that we wish to have in a mass education system and, on the other, the ability to resource and pay those salaries.

I think the lack of indexation has been a very difficult problem for universities for many years now. I think that for most universities, if we were relying only on student and block funding income, you could probably show a graph that would show revenue rising at about two per cent and expenditure at about 5½ per cent, dominated by academic salaries. That is a disastrous position to be in. We cannot lift our salaries any further; we would just give ourselves enormous operating problems. It is, for me, a looming problem across the professions. The average nurse, with 15 per cent overtime, earns more than the level B academic lecturers who taught them and who are X years older. It is a major problem.

**Dr JENSEN**—Something that I find interesting about your submission is that it must be one of the only submissions that do not mention the issue of the actual length of the APA stipend. Is that not so much of an issue at your university?

**Prof. Baker**—It is an issue but, of course, we also recognised that many other people would say similar things, so we chose to focus on things that we thought were, perhaps, going to be a little different. There are two differences with my university. First of all, we are working to drive down the average length towards three years. I take the view that, if that is the funding scheme, that is the measure of what is an appropriate best practice. We are not there yet. I am aware that there are the national averages, and our average length of PhD is certainly more than three years. We attempt to manage that internally by using our—

**Dr JENSEN**—About how long is yours?

**Prof. Baker**—I would not like, given your opening comments, to give you an exact figure, but it would be 3½ or four years.

**Dr JENSEN**—I am not asking—

**Prof. Baker**—What I was going to say is that the complication is that it depends very much on the discipline. Science disciplines tend to be manageable in the three years; engineering and some others tend to be longer. The issue that is quite different for us is that at the University of Southern Queensland three-quarters of our students are external to the university. It is not as high as that in the postgraduate market, but we have a very large and growing number of students who study part time and away from the university, even in the research sector. It is very difficult, then, to track these things because it is not exactly half time. So a lot of our students will be taking six or seven years, studying part time—a noticeable number of them. We also have a

growing number of candidates in the professional doctorate areas, which are not an APA question, but a lot of our resourcing goes in those areas too. But, for the classic equivalent full-time on-campus PhD students, 3¾ years would be about our average right now.

**Dr JENSEN**—Would you or would you not be calling for an increase in the length of that stipend?

**Prof. Baker**—I think it would be very helpful. The issue for us is, as much as anything, the number of them and how they are managed internally. It is not a simple matter of ‘if there were X number of APAs with so and so’. It is the number of scholarships we choose. We use some of our own funding to offer scholarships as well. So, yes, I would certainly welcome an increase in the length, but I also respect the fact that we are, as a sector, trying to drive the length of a PhD back towards three years.

**Dr JENSEN**—So you do not, in effect, buy into that argument that, by trying to push the PhDs to three years, you are actually devaluing the PhD in that the quality of work will, of necessity, be driven down?

**Prof. Baker**—There is a real risk of that but it is quite discipline specific. Again, from my university’s point of view, quite a few of our students come to us with a master’s program already. In those universities where it goes from an honours degree to a PhD, the factor you mentioned is very real because the innovation system has been so good that the level of knowledge required to start innovating is well beyond a bachelor’s degree. That is where one finds in disciplines dominated by the bachelor-PhD route the problem really arises. The PhD lengthens out at four years quite easily. So I think a squeeze there would be quite damaging. From our point of view, a lot of our students have a master’s program already. We do not mandate it but it has been the practice. That is why we have not seen it as such an issue, but I would certainly support colleagues in the sector who are making that argument. I think in those areas it would be very damaging and so a lengthening of the APA would be very helpful indeed.

**ACTING CHAIR**—We are just about out of time, but I wanted to come back and try to pin you down on the question that I was asking you previously about the ageing of the academic workforce. I appreciate your response, and the evidence that you have provided us has been reiterated by other institutions. I am particularly interested in your strategy for dealing with the problem. As you have said, it is a problem that your institution and others have acknowledged, but I am particularly interested in what you are doing to try to put measures in place to overcome that for the future.

**Prof. Baker**—The ageing of the workforce is an interesting feature. It is important to understand what that means institution by institution. We have a workforce that goes all the way from young through to old. We almost have a linear scale by age all the way through. We are at the moment, as I said, recruiting at the younger end quite reasonably. A local factor that I notice is that there is a lot of churn in the early years. Youngish academics—the ones who are 28 and have come along after their PhD—do not necessarily stay for a very long time before they leave. In that sense, the more stable population of academics is older. Our strategy therefore is to find ways internally to encourage those people to stay in the academic world.

**ACTING CHAIR**—What sort of things do you do?

**Prof. Baker**—Some of them are internal cultures, it has to be said. I think that—how do I put this diplomatically?—there are pockets of people who are disturbed by the young, vibrant and innovative, as there are in any organisation. We are trying to iron out those cultures within the confines of an enterprise bargaining agreement. Perhaps I should not say any more. It is perhaps not as bad as it might seem.

The other thing that we are working very hard to do is to look to international people and also to look in an equity sense. At my university—and I suspect it is the same nationwide—the number of women who reach the higher end of the academic scale is alarming. At the academic levels A and B, we have almost equal numbers of men and women. Family things take over. The real problem is that women do not return to the academic workforce. I am coming to an actual strategy; I am just describing a problem for the moment. The reason they do not come back is the competitive nature of promotion is such that if you have taken five years out of the workplace you cannot compete. It is still classically a male field. My apologies for saying it that way. We are therefore working hard to look for promotion schemes that value achievements relative to opportunity. It may be a fairly local, internal thing but I think it is very important to recognise the quality and value of a person and not the number of years they have sat in an institution and had opportunities by virtue of that fact.

For us, there is a lot of internal work because we do not have a workforce that is very old on a graph that is binomial, so to speak. We have a uniform spread. We are attracting people at the younger end. We are working on internal strategies to keep them and to change the gender balance. Beyond levels D and E is where it is a real problem for us.

**ACTING CHAIR**—Thank you very much for your submission—

**Prof. Baker**—You are most welcome.

**ACTING CHAIR**—and thank you also for your appearance here this morning. We have managed to cover a range of topics. Just very quickly, if there are any topics that we have not covered that you want to make a closing remark on, I would welcome that.

**Prof. Baker**—I think we covered most of the areas that are particularly important. Regarding areas of funding broadly—and I accept that it is a total package that one has to look at, not piece by piece—recognising, I hope, the value of innovation in as much as it stimulates the economy and recognising there may be ways to help universities stimulate research training schemes and academic careers, those things would be very, very helpful indeed for us. From a regional or non-metropolitan perspective, the issues of recognising value and that universities seek funding from different sources should be respected. It is the quality of the output that is important. Those are the things that we notice the most, and we would hope they could be accommodated in whatever way is possible.

**ACTING CHAIR**—Thank you very much indeed.

[9.42 am]

**RYAN, Professor Neal, Pro Vice-Chancellor, Research, Southern Cross University**

**ACTING CHAIR**—Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We thank you very much for your submission and now welcome a brief opening statement before we proceed with questions.

**Prof. Ryan**—I suppose our interest in this particular parliamentary hearing is that one of the areas that Southern Cross University performs very well in is HDR education. Our completion rates are among the best in the country; our progression rates are very high; our student satisfaction is normally ranked within the top three. So we have a particular interest in assisting any policymaking that relates to higher degree education in Australia to enhance education in Australia.

**ACTING CHAIR**—Thank you. If we could continue with the funding issue initially, could you explain your ideas that you mentioned in your submission on reviewing the RTS funding formula? Do you believe that it favours or disadvantages any particular universities in its current form?

**Prof. Ryan**—The difficulty that we have with the RTS funding formula at the moment is that we are routinely able to fill our RTS places. Indeed, you will see from the submission that we overenrol in RTS places at Southern Cross University and just subsidise that internally. As I mentioned in my introduction, the indicators around higher degree students at Southern Cross are among the best in the country in terms of completion, student satisfaction and all those sorts of things, but we feel we do not have enough RTS places. We can fill those RTS places quite easily. Where we are not among the best in the country is in attracting research income. I suppose to some extent—and I was interested to overhear the end of Graham's submission—the difficulty in terms of research income is that the smaller regional universities, apart from James Cook University, really are not going to be in the same league as the major metropolitan universities. That formula is partly heavily orientated towards research income. It probably distorts what we are capable of doing in terms of RTS places.

**ACTING CHAIR**—How would you improve it?

**Prof. Ryan**—We would like to see the formula changed so that it has some capacity to take into account some of the other performance indicators relating to doctoral completions and doctoral progression—simply the capacity to enrol students would be one issue—and some of the other indicators around, for example, student satisfaction.

**Mr SYMON**—I would like to ask you about the importance of good workplace conditions and especially how that impacts on women career researchers. You noted in your submission that women, especially in science, do not have opportunities because of their home duties. From a

university point of view, how could that be turned around and what could we as a government do to assist?

**Prof. Ryan**—We would probably argue for more flexibility in the way APA scholarships can be used.

**Mr SYMON**—So maybe we could take the tax off part-time scholarships. The full-time scholarships do not attract tax, but the part-time ones do, as I understand it.

**Prof. Ryan**—Absolutely. But I think that needs to be tied in with some guidelines or defining rules that govern the conditions around how part-time scholarships could be used. It would not like that to be opened up *carte blanche* for part-time scholarships. I would prefer to see that tied to a specific reason like maternity leave, raising a child or something like that.

**Mr SYMON**—That leads me to completion payments with the RTS. In another section of your submission you talk about SCU's commitment to Indigenous research. You say that, because so few students have yet completed, there is no funding to support that area. Do you have any ideas on how the system can be changed so that it supports the university and the students while they are actually doing their research rather than at completion? You always have to start new, but it would seem that under this system, when you start a new area, there is no funding there; it comes later down the track.

**Prof. Ryan**—The Indigenous program at Southern Cross is pretty strong. As of last week, I think we had something like 20 students enrolled in that area. Not all of those students are Indigenous; that includes people doing PhDs in Indigenous studies. I think we will by the end of the month have our second completion in that area. The strains on our Gnibi centre are that it needs resources and it is difficult to find suitable PhD supervisors. We have just done a recruiting round and I think we have recruited fairly well to achieve the capacity we need to do that sort of supervision. It would seem to me that there is a case in areas like that, particularly when they are being targeted as an area of high priority in a policy sense, to provide some sort of almost equity funding, if you like, to assist those areas to get up. My experience in this position is that supervision in those areas is much more intensive than for a normal PhD. There is a lot more nurturing required and it is time intensive for staff in terms of following up on all sorts of things to get people through. We are starting to get people through in those PhDs, but it has been very resource intensive. It has basically been subsidised by other things in the university in the interim. I would have to say long term they are going to be a much more intensive degree to get people through in any case.

**Mr SYMON**—In an area like that would you recommend shifting some of the completion payment forward?

**Prof. Ryan**—I would put it hand in hand with bringing some of the completion payment forward making the completion payment higher where you have targeted groups with certain priority.

**ACTING CHAIR**—At other hearings universities have said that they have had to wait for the balance of the funding. Wouldn't you get into difficulty if you were wanting to advance the

payments if the universities themselves were not getting their own funding coming through? Is this a problem for you?

**Prof. Ryan**—I am sorry; I did not understand that.

**ACTING CHAIR**—You are talking about advancing the payments and making sure that the payments are there at the time of completion. If you are not getting your own funding through in time, doesn't that create an even more difficult problem for you? Or do you not have a problem of getting your block funding coming through?

**Prof. Ryan**—To be frank, I am not sure that we have a problem with our block funding coming through. It is not a problem that would be in my mind—that we have had that trouble with block funding.

**ACTING CHAIR**—I just thought I would check on that point.

**Prof. Ryan**—It would be if we weren't, but I have not been alerted that we are not.

**ACTING CHAIR**—If it had been a problem, I am sure you would have been alerted to it.

**Dr JENSEN**—One issue that has been brought up is one that I had not thought of in this context and that is the issue of the negative effects that having families has on the careers of females in the workforce. How do you address that in scientific research areas where obviously currency is quite important? How would you go about addressing that for women who have had a family and are wanting to re-enter the research workforce in a scientific area where currency is an issue?

**Prof. Ryan**—I am not sure that we are addressing it particularly well at the moment. A real strong area in science is agricultural science. Interestingly enough, we do have PhD educated women who have been at home bringing up children. For those who have wanted to re-enter the workforce they have started in some sort of research capacity but probably not at the level they are educated at and worked their way back up. That is the pathway. By being out of the workforce they definitely have gone backwards from where they would have been careerwise, but they do work their way up.

My observation is that they have typically been on short-term contracts, which I think is an issue. Those special research centres that we have here and probably are at most other universities do not provide tenured employment. I suppose I am identifying the problems without giving the solutions. I think that is part of a bigger problem. Re-entering the workforce through the pathway that would be available to them, which has been on ARC grants, CRC funding or something like that, does not give them tenure. I think that is part of a broader problem: research-only staff tend to be on short-term contracts whereas staff who are attached to schools and faculties are in tenured positions.

**Dr JENSEN**—At Southern Cross Uni, how long do PhDs take on average? You suggest a grad certificate in research management—would that be of necessity a part of the PhD process and, if so, what effect would that have on the length of PhD candidature?

**Prof. Ryan**—We have not gone down the path of making it compulsory. It is really designed for researchers doing a PhD who see themselves as having a research career. This is additional research that equips them to be research managers at the end of it. So the students that are encouraged most vigorously to undergo that coursework are typically students who have placements in CRCs, for example—especially industry CRCs. I would not see it as any more onerous than any other PhD around the country that requires some coursework. My previous position was at QUT. QUT, for example, require coursework of their students of about the same magnitude. It could extend the PhD but it is an American model and it is probably nothing more than what the American system does. I did overhear the conversation that you had with Graham, and I am sure that there is good reason for extending APA scholarships. But, with the capacity to extend into 3½ years, I actually think it is pretty good discipline for students to focus their energy and time to get their PhDs done. I do not know the exact figure but I think our completion rates are fairly good. I think the discipline of both the limitations on the funding and the completion money at the end of it does give an incentive to students to finish their PhDs on time. It would worry me more that at the end students drag things out and do not give attention to completing on time rather than the other way around. I think 3½ years with the possibility of four is probably reasonable, but, again—as I overheard in relation to Graham’s university—our goal is to get people to finish in three years. Certainly, looking at industry related PhDs, industry people would be alarmed to hear that we are contemplating spreading PhDs out much longer. Looking at stuff that I am involved with with PhDs, for example, even selling the idea of a PhD project being three years is a tough ask with industry partners. They tend to want results a bit more quickly than that. I think the time frame that it is pitched at at the moment is not too bad.

**Mr RAMSEY**—One of the recommendations you have in your submission is aimed at international students. You criticise the Endeavour program as ‘complex and poorly targeted’. I wonder if you could take us a little bit further in that area. You then suggest that ‘each award fully funds the fees and living allowances payable by the student’. This would be a fairly generous treatment of international students. Given that, wherever we go, in the end there will always be a finite bucket of money, that values their input very highly. I wonder if you could take us down that track and explain why you place that involvement so highly.

**Prof. Ryan**—I suppose the general policy debate at the university level is about how much we fund the international students ourselves—especially at a university like ours which fills its RTS places quite easily anyway. My personal belief is that, to get the higher quality students, we are going to have to find more ways of attracting the international students. But, again, there is a resource implication for universities in terms of supervision and provision of services for the PhD students. I think that part of the submission came from a particular part of the university that was finding it was not competing with other universities in attracting the international students into the area.

**Mr RAMSEY**—I guess my point was that if you have got a finite bucket of money, in the end it will impact somewhere else if we treat this one sector more generously than we treat other sectors. If it is deemed as being a high enough priority, so be it.

**Prof. Ryan**—It would be a high priority for us in the current climate. I too have also just recently advertised nationally for a PhD student and I did not get one application. I know that I can fill that place with an international student of very high quality. It could be a temporary thing while the demands on the workforce are so stretched, as they are at the moment. I think most

universities are trying to fill those places, especially in business areas. A graduate in finance can get \$80,000 a year. Why would you bother with a \$25,000 scholarship? Filling those places that we cannot fill at the moment is the issue with the international students. I think everyone is trying to make it more attractive for the international students to come here.

**CHAIR (Ms Vamvakinou)**—My apologies for being late, Professor Ryan. When I went through your submission I was interested in a number of points that you made. One in particular that does not seem to have come forward in other submissions is where you talk about the belief that Australian trained researchers are not as good as those who have been either entirely or partly trained overseas. I was curious to know a bit more about where that perception may come from, given that we are also aware that there are a large number of international students who want to come to Australia and pursue research here. We as a committee are contemplating the tension between making our research more available to international students and how that may pan out in relation to domestic students. I see a little contradiction—unless I have missed the point that you are making—between a lot of people wanting to come here and study and yet the perception that our Australian trained researchers are not as good. It just does not seem to be consistent with what our understanding of our status in the world has been—maybe not what it will be in the future but certainly what it has been to date.

**Prof. Ryan**—I suppose the thought behind that was not particularly about international students wanting to come here. That particular area is something that would be a debate that is particularly prevalent among quantitative researchers. Going back to the issue that was raised earlier about asking our students to do a graduate certificate, there is a debate that goes on at a lot of universities about how much course work we ask students to do. Those disciplines that are strongly quantitative look at the American model, which requires their students to do a lot more course work in quantitative methods, if you like. This is really a debate among academics. I think it has more to do with perception than it probably has to do with reality. Certainly those people that see the system where students are required to do a lot more course work in quantitative analysis, for example, believe that that leads to a more rigorous degree or a more rigorous PhD, if you like, at the end because students are more fully equipped both in depth and breadth in what they do. I must say I am not necessarily one of those people myself, but it is certainly the debate among science people and in the area of quantitative analysis across a whole lot of disciplines.

**FRAN BAILEY**—Thank you very much, Professor Ryan, for your submission and for your appearance here this morning. If there is a matter that we have not covered in our questions and that you would like to address in a brief closing statement, you are very welcome to do so.

**Prof. Ryan**—Madam Acting Chair, I would like to pick up on a thing I overheard with the previous person when the committee was asking about ageing of the workforce. I suppose I just want to make a comment about that. Because our PhD completion is pretty good, we do have an issue with finding suitable jobs—and certainly you picked that up with regard to women who have completed PhDs. We do have an issue at our place with ageing of the workforce. Indeed, anyone on the committee who read the last AUQA report would know that one of the things that the university got criticised for was that our workforce continues to age and we have not had good performance management systems that have been able to move people on. I live in an area where people want to retire to. Our university footprint is northern New South Wales and people go to northern New South Wales both to retire and to do whatever else. I think there is an issue

there for the university. By the same token, the people who are completing PhDs also want to live there. They will at the end of the day move to one of the larger metropolitan places because that is where they are able to pick up employment. But they would prefer to be where they are.

For example, with my maritime scientists we have wonderful completion rates. We have the most attractive projects that people work on, those with whales and dolphins and all those things that get into newspapers and give people warm, fuzzy feelings, and people want to stay around Byron Bay studying whales and dolphins. But there are no positions there. Part of the reason that there are no positions there is that we do not have good processes by which we move people on so as to be able to create positions at the bottom. I want to throw that in as a thought. I think it really is an issue for regional universities to be able to keep the PhD students that they have and to be able to grow their university from the bottom up.

**FRAN BAILEY**—Thank you very much, Professor.

[10.09 am]

**MacAULAY, Mr Graham John, Human Resources Director, Queensland University of Technology**

**STEDMAN, Dr Lawrence, Principal Policy Adviser, Queensland University of Technology**

**WISSELER, Professor Rodney Charles, Dean of Graduate Studies, Queensland University of Technology**

**CHAIR (Ms Vamvakinou)**—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. We thank you for your submission. You are now welcome to make a brief opening statement before we proceed to questions.

**Prof. Wissler**—Thank you, Madam Chair. I will lead off, but my colleagues and I are the joint authors of the QUT submission, so there are sections of the submission that they will be better placed to talk about than I. Lawrence has contributed particularly to the area of the academic workforce issues and Graham particularly to the area of the early career academic development programs and other HR related programs that have been put in place at QUT to attend to career paths.

I am happy to say a couple of things about the PhD end of things. That is my primary area of responsibility. The two documents which I have tabled this morning give you some sense of the particular area of focus in research training that QUT has adopted over the last five or six years. That is the area of the graduate capabilities of PhD graduates. A lot of this work we have been doing in collaboration with the other ATN universities. You can see from our submission that a lot of our concern relates to the issue of capabilities that PhD graduates take with them out of the university into the range of employment situations that we know they are going into. It is not simply a matter any longer of PhD graduates only going into academic jobs. So what we have sought to do in our research training is to attend to that broader range of capabilities that are increasingly called for in the contemporary knowledge economy. I will not speak to those documents in detail, but I think they provide a fuller picture for the committee of the kinds of concerns that we have in that area than we were able to present in the submission.

**CHAIR**—Thank you very much. I came in at the tail end of the previous witness, who seemed to indicate a lack of support for extending the period in which PhDs must be completed. There has been quite a lot of general support for an extension of that time frame for a whole series of reasons, one of which is central to your submission as well, and that is that PhD students need to acquire all sorts of other skills in order to be ready to extend their capacities in the workplace, whatever that workplace may be. I would like your views on that. The previous witness was one of the first to have actually spoken against an extension of time on the basis that it would not be good for the purposes of discipline. But he also indicated that it would send the

wrong message to industry in relation to discipline and ability to finish within prescribed time frames.

To follow on from that, I would like your thoughts—if you could expand on it a bit more—on how industry, in particular, other than academia, can be made more aware of the value of a PhD qualification. Underlining a lot of our inquiry has been the way that people perceive the value of a PhD in the traditional areas as a pathway into academia. Not as much is known about PhDs in industry and I think that that is really where we need to concentrate a lot of our efforts and grow our postgraduate career pathways. Can you expand on that a little bit.

**Prof. Wissler**—I will go to the first question first and if I remember the second one I will come back to it! The duration issue is complicated, I guess. Our submission says that we think a six-month extension on the basic provision would be appropriate in order that the issue of the generic capabilities can be fully dealt with. We have made very strong efforts to have our PhDs scoped at three years in order to meet the framework within which we are operating. I am aware of the discussions that the committee has had with other people on how long it takes to do a world-class PhD—whether it is four years. Currently, the averages are 4.3 to 4.8. How do we best manage the relationship between the scope of the project and the quality? They are not the same thing, although often they are talked about as if they are the same thing. They are definitely not.

We happen to think that a properly scoped three-year PhD can be world class. We think that the discipline of delivering an outcome from research within a given period of time is an appropriate discipline for research trainees to learn. After all, ARC and NHMRC grants both work to a period of time. So for PhD students to learn the scope of the project management which it takes to deliver an outcome is all part of an appropriate framework. Having said that, I think that the three-year duration tends to limit the risk taking which can be an important part of doing a PhD and which is another significant aspect of doing research—getting used to taking risks, failing and having time to rescue the project through a plan B. So it is complicated.

We have said we think 3.5 years would be a good benchmark. But we need to retain the emphasis on appropriate scoping, we need to retain the emphasis on project management, we need to retain the discipline of delivering on milestones and delivering outcomes and we need to up the ante in terms of the development of these skills and competencies which an independent researcher must command if they are to deliver the original contribution to knowledge that we all look to PhDs for. Although in the case of APAs, for instance, there is a notional possibility of a six-month extension, the funding reality is that the university receives about 3.1 to 3.2 years funding for each APA. So the availability of the six-month extension on the base three-year provision is very limited. At QUT extensions are very hard won and range normally between two to three months. The system has been constrained over the last decade—I think that is obvious to everyone—and we run the risk of it limiting the scope of the possible outcomes.

**CHAIR**—Would it be fair to say that the system in its current form does not accommodate the needs of the modern PhD? We hear the term ‘modern PhD’. My understanding of that is that the lifestyles and commitments of the sorts of people who are going on to do PhDs may mean that there are legitimate issues that require an opening up of the time frame to finish a PhD. We have had discussions about people with family commitments needing to be employed in some capacity, which goes to the core of the financial viability of actually doing a PhD. Those issues

come up time and time again. Although I understand the academic discipline and requirement, I wonder whether the concept of the modern PhD also goes to being a bit more open and extending that time frame to fit in with the kinds of lifestyles people generally have now.

**Prof. Wissler**—We are dealing with two things, aren't we? We are dealing with a notional RTS provision of four years on the one hand and a notional APA provision of three years with a possible extension of six months on the other hand. I think that the truth of it lies somewhere between the three years and the four years and that we could retain all of the appropriate disciplines and accommodate a wider range of pathways into the PhD, which has been a feature of the system in the last 10 to 12 years, within that 3½-year baseline APA provision.

**FRAN BAILEY**—We have also had evidence provided to us about the benefit of international study and international networks. Do you think that the model and the time frame would need to be altered if that were deemed to be of added value?

**Prof. Wissler**—Again, our submission makes the point that an extension of the baseline provision to 3.5 years on scholarship would allow universities to take advantage of those outward mobility programs. We certainly run our own outward mobility program for PhD students and have for many years, providing them with travel assistance to go to conferences and to spend a period of time at an international lab. We are seeking to fund all of that within a time frame, which just adds pressure to the industry connection.

**CHAIR**—Can I just go to the second question. I ask it because we look at statistics and comparisons between the number of PhDs, for example, in Germany and other countries and in Australia. Obviously their societies value PhD studies. I might be wrong, but it is apparent that there is a greater value placed on having a PhD, so I am interested in the comparison. I do not know how our industry here in Australia values someone who is at PhD level. Can you tell me what might be going on there? Do we have a lot of work to do in advancing the value of the PhD in industry? Also, not just in industry but outside of the academic sector—universities—it is apparent that PhDs do not seem to have much value. Why would they go and teach in secondary schools, where they could be of absolute benefit to the standard of education in the various subject areas? We do not seem to cultivate that kind of requirement in our secondary schools. We are nowhere near that, and yet I feel, just on the basis of where we are all heading internationally, that that is probably something we should be considering as an additional pathway to achieving excellence in teaching in schools, particularly secondary schools, which then will have a spin-off effect on what goes on at universities.

**Prof. Wissler**—I think there are related answers to those two things which go to the way the traditional PhD has been conducted in the older universities and the way that that has then been perceived by the community at large, whether it is industry or whether it is the man and woman in the street. I think the traditional isolation of the whole academic endeavour, if you like, from the broad stream of society has contributed to that deeply held perception in the industry and in the community that the PhD is a bit of a pointy-headed person who cannot really connect.

**CHAIR**—Out of touch.

**Prof. Wissler**—Is out of touch. I think the advent of the new universities has actually given that a bit of a shake. We have opened up a range of different pathways to PhD study. We have

engaged strongly with industry and other forms of community activity in the delivery of research education. There is more to do, but there are models of interaction which have been embedded in the system now for nearly 20 years, and in our thinking about the whole system we need to make sure that the dynamism of the last 20 years in terms of those new models is fully protected rather than looking for concentration of resources into an ever smaller number of institutions and so on. On your point about the intersections with schools, there again I think we can look to some flaws in the traditional separation in the old universities of science and engineering faculties from education faculties. The thought that PhDs might have something to contribute into the schooling system was until fairly recently something of an anathema, I would suggest.

So there are long traditions of separation there, which, I think it is fair to say, some of us have been working at for a long time. We have a specialisation in maths and science education at QUT in our faculty of education. Our science faculty runs a science train, which goes out to regional Queensland. Ninety thousand schoolkids come and interact with both our education people and our science and engineering people. So, again, I think there are some very productive models out there, but one would not pretend that this can be solved overnight. Perhaps my colleagues might like to comment.

**Dr Stedman**—I would just add to that a comment on the valuing of PhDs in industry. Industry value something when they can realise there is a tangible benefit from it. I think the situation with PhDs reflects more widely the level and scale of innovation and R&D going on in Australian industry. We have known for a long time that private investment in R&D is at the wrong end of the OECD scales on these sorts of things, so part of the push to increase the intensity of innovation in Australian industry will carry with it an understanding of the value that PhD graduates bring to that process. If you are in an innovation-light environment, you are always going to have an undervaluing of PhDs. It will vary by sector. At the moment, there is quite a strong demand for PhDs in particular industries—obviously mining, engineering and so on. There is a very different situation that applies in secondary schooling or in areas of the health sector. It probably reflects the wider innovation environment in Australia, rather than there being particular things about research training—although, as Rod has said, in the last decade or so there have been much closer ties made between universities and industry. Through ARC schemes such as Linkage schemes, which come with APAs attached to them, there are closer bridges being built with industry, interpreting that very broadly—the traditional industries and also places like schools, where we have a lot of good connections going on.

**Prof. Wissler**—One of the corollaries might be that flyer which I provided you with relating to the association between the ATN of Universities and the CRC Association in building this graduate certificate in research commercialisation for PhD students in those settings. This is all aimed at some transformation in the relationship between academia and industry in the context of the applied research that goes on in those CRCs. That is just one example of the kinds of things that I think can be done to help industry more broadly to understand that the PhD that they might have in their mind is not actually the PhD that is being delivered anymore.

**CHAIR**—I am wondering whether it is just too hard and too costly to contemplate the possibility of encouraging people with PhDs in various disciplines to become teachers at schools rather than just at universities.

**Prof. Wissler**—Costly?

**CHAIR**—You would not be able to pay. You would have to look at the issue of salary. Already salary is an issue for teachers, and a legitimate one. Someone with a PhD in English literature or a PhD in some form of science or maths might contemplate a career in schools. I do not know how many PhDs there are in schools. There probably are not very many. You could probably count them on your five fingers. I think I know of one in Melbourne, but that is in a non-government school and in an English department. It just occurred to me—I have got a teaching background—that we are in a state at the moment with our schooling generally where we really need to revisit what goes on at schools. There is a direct relationship to what happens at university level as well, in relation to domestic students at least.

**Prof. Wissler**—I can think of a couple of PhD graduates who are working in schools. I was involved in the supervision of a PhD in music who is now head of music at a non-government school. We have certainly had chemistry PhDs coming through who are in the school sector. The other aspect of this is the whole professional doctorate in the education area. That is a very productive way, I think, of getting research-trained people into the school system. There are different pathways for different people. The other point about this is to do with the broad interest of research-trained graduates in teaching, whether it is in schools or in universities. While we are inclined to think that the PhD-trained person is automatically capable of being a university teacher, it is clearly not the case. So the transitions out from the PhD and other forms of research education are where we would need to pay attention, it seems to me, if we want those kinds of career paths to be opened up.

**CHAIR**—Or the encouragement of those who are currently teachers to go into—the other way around—

**Prof. Wissler**—To move in. Absolutely.

**CHAIR**—Those who have the actual teaching skills to begin with. Thank you for that; it is just something that I kick around from time to time.

**FRAN BAILEY**—Given the importance of research and innovation to our national economy, I am particularly interested in your comments on the aging of the academic workforce and, also, on what strategies you have got in place at QUT to address this issue.

**Prof. Wissler**—I will pass to Graham to answer that one.

**Mr MacAulay**—We mentioned in our submission that we have developed an early career academic recruitment development program. I think it is the only one of its kind in the sector. A number of other universities have early career development programs, but we have linked it to a recruitment program. We started in 2004. We go out into the marketplace in a pretty high-profile way to recruit early career academics as a way of trying to regenerate our workforce. We have done it four times now. We started off with a two-year development program and with about 20-odd positions in the first year. In the last two years we have recruited to 65 positions and we had 1,000 applicants.

I think this demonstrates that, if you can package something to help fast-track people in their academic careers and to support them, you can attract candidates. My colleagues at other universities regularly say that they cannot get people to enter academia. We say that we are

flushed with candidates—1,000 for 65 jobs—so this model is working for us. We are getting good retention rates out of it and, also, people from the program we started a few years ago now are also progressing through the levels in academia in terms of promotion. I think that has been our flagship at the university: to do something meaningful in terms of addressing the issue of an aging workforce and to give people an opportunity to enter academia and fast-track them in their academic career.

We have recently developed a mid-career program that is purely focused on development rather than recruitment. So we are focusing very much on bringing people into the university at the early career end, looking at ways to facilitate their promotion through the ranks and, if so, recruiting heavily at the top end to try to regenerate our aging workforce. That is what has worked for us. A number of other universities have looked at it and have thought about it, but no-one has gone down that track yet to replicate the model.

**FRAN BAILEY**—This might be regarded as a bit of a dorothy dixer to you, but you are dealing with colleagues from other universities all the time. In your opinion, are the so-called ‘new universities’ being more proactive and more innovative in this area than the older, established universities?

**Mr MacAulay**—Certainly something that is driving us and a lot of the other newer universities is, in particular, the building of our research capacity. We have got a lot of catching up to do. I think that is probably forcing us to be more innovative and to think about ways in which we can bridge that divide to address these things. I would say ‘yes’, but I would leave it to you to make that judgement.

**FRAN BAILEY**—I did say it was a dorothy dixer for you!

**Mr SYMON**—My question relates to career advancement for research graduates and staff. In going through your submission, I found it very interesting to see the figure you put there concerning the problem of the ‘short term and unpredictable nature of employment’ for specialist research staff. At QUT fewer than one per cent of research staff have ongoing employment and the average term of employment is two years. To me it seems that, if people have no clear vision for their future mapped, it would be a great barrier to actually keeping them inside the institution. Is there a way you could suggest that this could be resolved? I am talking here about action either at the government level or at the university level.

**Mr MacAulay**—I think the main way to do it is to look at how we can pool our resources or opportunities to give those people a greater sense of long-term employment. Across the university that is a challenge in terms of people being paid for research grants in different areas. So, across a sector I guess it is even more challenging to get the cooperation to try to build some sort of career for people who are basically employed on short-term contracts. Maybe it is a reflection on the short-term nature of grants—maybe addressing the short-term nature of grants. Maybe Lawrence or Rod would like to add to that.

**Dr Stedman**—At one level, things like the Future Fellowships and ARC fellowships provide for, if you like, the cream on top of that, but there are a lot more research-intensive staff employed on research grants than can be covered by those sorts of things. Any expansion of those sorts of programs will of course help those sorts of areas. But a research-only career is

always going to be a difficult one to sustain because there is not the underlying funding to put these people on longer term contracts. It is the same in places like the UK as it is here. However, it is the transition from those sorts of things into an academic career that is quite a tricky point for us to address, and it comes with the extent of research funding and the extent to which we have the capacity to move people across—to bridge them, if you like—from grant to grant on some of those sorts of things. It generally relates to our capacity to support people with the resources we have available—and, of course, those general resources for supporting staff have come under a lot greater pressure over the last 10 to 15 years as a result of a deliberate policy of making sure our income is less than our costs. That has been reflected across the system. It will also impact not only on research-only staff at that stage when they are on contracts but on PhD students working as casuals.

The CAPA submission has pointed this out as well, complaining about casual rates and saying that they should be increased. Of course they should be. Generally, in terms of the attraction of a research career at that entry point, at that point when you are on research contracts and later on when you are trying to break into an academic job: each of those has unsatisfactory pressures. And the capacity of universities to support people across those has been put under a lot more pressure than it was a decade or two ago.

**Mr SYMON**—Following on from that, I take it you would lose quite a few to industry, which can offer both a better wage but also a better career structure and I suppose, dare I say it, permanency to a postdoc, or whatever it may be. What do you have in your armoury at the moment to defend against that happening?

**Dr Stedman**—Perhaps we do have mixed feelings about increasing the value of PhDs to industry in the next few years. Certainly it is going to be a challenge for us. What we do have is whatever capacity we have to support people: bridging them from contracts, providing better conditions for them, providing schemes which can support the best students, and sometimes we have government assistance with those—and the Future Fellowships, as I mentioned, will be a small step towards that. Again, it is about having to be strategic about where we put the discretionary resources we have within the universities to support those sorts of people, and it really does take some quite hard decisions about concentrating your resources.

**Mr SYMON**—So it comes back to cross-subsidisation from other areas to support those particular ones that, strategically, the university wants to follow?

**Dr Stedman**—Yes, but cross-subsidisation is probably not the right word for it because it is not a matter of directly taking money out of one area and deliberately putting it into another. It is a matter of having a discretionary pool of resources within your university that you can put to these sorts of things. That, again, depends on the quality of the income you have got, the extent to which you can realise economies of scale from having a big enough resource base in research in particular areas and, generally, the attractiveness of the working conditions you can offer. We are looking at strategies for doing at that. The ECARD program is part of that: the early career, the middle career and so on—just trying to get things to line up properly so that people have a career they can face rather than a series of hurdles at different points.

**Mr SYMON**—Thank you.

**Mr RAMSEY**—I would like to follow on from what Maria was saying about the way that industry values PhDs in Australia. I think you are on the right track here. I think if we had more interest from industry we would have more people wanting to do PhDs and thus we would have more academics. You mention possible tax incentives for industry to take on PhD graduates, I presume. Do you have any more thoughts on how that might be structured or is it just sort of out there?

**Prof. Wissler**—It is probably out there in one sense, but extending the R&D tax concession in some way to encompass the employment of PhD graduates is, I guess, the definitional step that might need to be taken in order to get that pipeline flowing.

**CHAIR**—That is interesting. Thank you for that.

**Dr JENSEN**—You mentioned that, with the short-term stipend of the APA, there is an inhibiting risk in a PhD project. I have a little concern about that in that you do not want to be investing in a PhD project that is inherently risky, because you could end up spending three or four years with no research outcomes. On the other hand, there is the issue with ARC and NHMRC graduates, which is in an area where you could effectively be looking at risk but, because of the nature of those types of grants, the grant applications are inherently conservative. One issue of concern is about attracting people into research careers. They want to see some of these—I will not say ‘out there’ areas but areas of significant interest where the research activity is inherently risky but bigger issues are investigated, as opposed to what you have with the ARC and the NHMRC grants, where it is inherently evolutionary in its approach and thus, while it is advancing the science, people lower down do not see that as particularly exciting in generating that interest into going into a research career.

**Prof. Wissler**—I guess what I was talking about in terms of a PhD and risk was that there is an appropriate level of risk that is always in play with a PhD, as opposed to a master’s degree, by research where I think we are not talking about the level of original contribution to knowledge, which is a global expectation of a PhD. The point I was trying to make is that we need to scope the project appropriately and we need to understand that there is some risk, and there has to be some flexibility to deal with that. But I agree entirely that a PhD is a research training degree; it is not the context within which you develop a Nobel Prize winning outcome. So it is a case of keeping all of those things in balance.

In the context of the major granting schemes I think there is some reason for accepting that there is a level of conservatism in the way that those structures operate. If you acknowledge the fact that grants are very often made on the basis of track record, that tends to militate against the younger people coming through. The whole area of interdisciplinary work is very difficult to manage for the ARC and the NHMRC. But I think those organisations are aware of those issues and seek to manage them. One of the interesting areas in terms of the excitement prospect of research comes back to operating in interdisciplinary areas that are at the edges. Part of our responsibility in the research training domain is to ensure that people can operate effectively across those disciplinary silos which have determined so much of the research that has taken place and that has been funded through those major funding agencies.

**Dr Stedman**—The notion that peer review and track record are conservative is a perennial issue, but I think it can be overstated. I used to be involved with the NHMRC and, when I was

involved with those sorts of processes, I was struck that there was a lot of good faith when people were reviewing those sorts of things. They were not out to support fishing expeditions; they were genuinely looking to be flexible in how they dealt with those sorts of things. I think there is still plenty of room for innovation.

**CHAIR**—Thank you very much. It has been a very rewarding discussion. Thank you for your submission.

**Dr JENSEN**—I move that the committee accept QUT's submitted material.

**CHAIR**—There being no objection, it is so ordered.

**Proceedings suspended from 10.45 am to 10.57 am**

**MACONACHIE, Mr Donald, Director, Teaching and Research Services, University of the Sunshine Coast**

**PALMER, Ms Barbara Claire, Manager, Office of Research, Teaching and Research Services, University of the Sunshine Coast**

**CHAIR**—I now call representatives of the University of the Sunshine Coast to give evidence. Do you have anything to say about the capacity in which you appear before the committee?

**Mr Maconachie**—Barbara reports to me.

**CHAIR**—Thank you. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently they warrant the same respect as the proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We thank you for your submission and now welcome you to make a brief opening statement before we proceed to questions.

**Mr Maconachie**—Thank you. I have a couple of really brief points to make. We submitted only a brief submission as well. I just want to indicate that there are two or three priorities that we see as important in this whole review. The first one is in our recommendation 1, which is about what we see as the need to increase the quantum of resources available for research training in the Australian system and to, as in recommendation 3, increase the amount of those resources that flow through to the candidates themselves. As a generative component of the whole process, we think that what is going on with honours education is a little disturbing and that some sort of commitment to support for honours programs would be an important part of the whole research training system as well.

**Ms Palmer**—We agreed that the priorities for us are the institution's funding and the funding of the candidates.

**CHAIR**—It is pretty clear in your submission that the funding is really underpinning it right across the board, and possibly I sense some sort of restructuring of the way things are administered at the moment. I am interested in what you have just said about honours and what it is. Can you elaborate a little bit more on the situation with honours? What is going on with honours?

**Mr Maconachie**—I should have brought data to back up what I want to say. I can only speak anecdotally at the moment. There is a clear indication that there are not as many students taking honours as previously in the Australian higher education system. It does seem to be an important first year of research training, whatever way you look at it. It is obviously the final year of an undergraduate program, but it is also the first year of research training. It is increasingly more professionally managed as research training. At the University of the Sunshine Coast our faculties invest quite heavily in developing their honours students in the hope that they will continue as higher-degree-by-research students. But we do tend to lose most of them, unfortunately, because we do not have the scholarships to offer that we would like to. I think

some sort of commitment through the Commonwealth Grant Scheme that supports undergraduate programs to ensure the future of honours programs in the system would be an important move to make in bolstering research training across the sector.

**CHAIR**—You mentioned scholarships. I am assuming that what you are indicating is that students are not taking up honours because they are not in a financial position to do so. Or is it because they have decided to go off and work instead? If it were money, it would be easy, wouldn't it, but is there an attitudinal thing happening as well?

**Mr Maconachie**—I think the economy is a major factor and people are taking up other options. I do not know whether there is a strong sense of what sort of a career follows from doing research training either. There are possibly some perverse financial messages in the way the research training scheme works as well. I think what we are seeing is students opting to do a master's program rather than an honours program because they can get a stipend.

**Ms Palmer**—A one-year first-class honours program will normally take you straight into a PhD program. That is a really long-term commitment. That is the commitment of another three or four years of postgraduate study and, in a climate of fairly high employment and fairly solid graduate incomes, students are not necessarily making that commitment. Given that stipends are very low, it is a tough choice for people to make.

**CHAIR**—I have not asked this question before but I will ask it now and continue to ask it until the inquiry is finished. In your experience, when you observe students and interact with them, are you observing a certain malaise and disinterest in not just an academic career but actually staying on at university for periods of time? It is not just about going into high-paid jobs. A lot of kids tend to think, 'Why would I go to uni and waste my time and incur a debt and end up nowhere,' because they do not see any clear purpose. It did not seem to be a problem when I was at uni. Maybe I am misreading what it was like when I was at uni—I do not know—but kids seem to be more interested in earning money fairly quickly, even if it is not the big-dollar salaries that are available in Western Australia, but it is in other areas. They would rather be employed and find different ways of making money than be sweating it out in libraries and at university. Are you picking up some sort of attitude or culture that particularly this generation has?

**Mr Maconachie**—We are seeing behavioural change. It is a little bit hard to attribute causes to it at this stage, but it does seem to be aligned with the economic options that are available. I think one of the major factors is that there are so many ways back into higher education these days. The perception previously was that you had one shot at it and you went as far as you could and then you went to work. I think we have a much different set-up now where we are all looking to bring all sorts of ages of people back into higher education and opening up access in all sorts of ways, including pathways through TAFE. It is not such a consequential decision to make these days to not go on to university after leaving school.

**CHAIR**—There also is the infamous gap year which seems to have become very popular now. I am glad you have raised that point of other pathways back into university which help students who perhaps cannot get through the year 12 door for whatever reason, which could be an obstruction to future researchers. That is interesting. Thank you.

**Mr Maconachie**—I like to think that we are storing up all sorts of postgraduate students for later.

**CHAIR**—They will come back to the system later. Our aim is to entice them back later and dispense with the traditional time frame and pathways.

**Mr Maconachie**—And I think they will want to come back as well because when they get into work, particularly in the professions, they will eventually realise that the best jobs are for those who have the best qualifications, and increasingly for the knowledge economy research training is going to be an important skill to have.

**Ms Palmer**—Just to add to that, I think we should be careful not to make the assumption that postgrad students have come straight through. A lot of our postgrad students are mature age students who have families and partners and make really big commitments to come back and study postgraduate research. I think it is a mistake to assume that people follow a straight-through pathway to PhD programs. It is not as common as—

**CHAIR**—I think we have got that message, but, having said that, what you have just indicated about the modern PhD student—I think I understand what that means now—is obviously labouring the point that it is much harder for those people once they have made the decision to come back.

**Ms Palmer**—Definitely.

**CHAIR**—But the financial assistance that is given to them while they are doing the research is so inadequate that that could then drive them out of the system as well.

**Ms Palmer**—It also drives them into part-time candidature, and they are much more at risk as part-time candidates. It is much more difficult for students to manage all of those commitments and a part-time commitment to PhD candidature. So they are much more likely to be at-risk students as part-time candidates than they are as full-time candidates because it is such a long time to be under that kind of pressure.

**CHAIR**—So the question is: how do you accommodate those new realities? Is it just about money?

**Ms Palmer**—A lot of it is about money. It is not only about money, but from the students' perspective a lot of it is about money. Where they are earning \$20,000 a year, they are working as well. So, if they are full-time students, they are working in the university, potentially, or working in other places. Where they have made the choice that they have to continue to work part time and be a part-time candidate, or sometimes work full time and be a part-time candidate, whichever way you look at it, it is about money. For full-time students on scholarships in particular I think it is about money.

**Mr Maconachie**—That is partly reflected in the fact that all of us, I think, have increased over the last decade or so the ceiling for the number of hours that we permit scholarship holders to work. It has probably gone up by 25 to 30 per cent. And that, once again, puts more pressure on the students.

**CHAIR**—It would—absolutely.

**FRAN BAILEY**—Thank you very much for your submission. I am actually aware of the terrific work that you have done with IT and the scientific work with your incubator up there, which is leading the way across Australia. So I am particularly interested in where you talk in your submission about your approach to collaborative PhDs and looking at more flexible funding mechanisms. I would like to tease out some of your ideas on these two issues.

**Ms Palmer**—We have got some opportunities for students to work directly in industry, and we do that quite significantly. Some of them work with the innovation centre, but they work with other industries as well. There is sometimes difficulty in the funding mechanisms around that. It is all about grant funding, and it is sometimes difficult to establish those connections. Having students funded and project costs funded takes a significant commitment from the partners as well. Is that the sort of area you are talking about?

**FRAN BAILEY**—What I was getting through your submission was the need to encourage research. If we are to encourage a greater effort of research, we perhaps have to start looking at doing things differently. I was particularly interested in your views on both of those issues.

**Mr Maconachie**—Our views are about the problems rather than the solutions at this stage. Clearly, increasingly in our place and elsewhere the research projects are linked with industry, and I think that is a positive thing for everybody. But they are the most difficult projects to fund and the mechanisms that we have at the moment do not seem to be well designed for that purpose. I think the extent to which applied research work is now being conducted with industry has changed over the last decade. Things like the CRC program and the linkage projects with the ARC have made a big impact on people's consciousness about that. And the needs of the economy are driving it as well but I do not think our funding schemes have kept up with it. We have not put a lot of thought into what sorts of schemes would work better, but we can see what is inadequate about the way things are at the moment: it is a little inflexible.

**FRAN BAILEY**—But you have an established model with your cooperation and collaboration with industry.

**Mr Maconachie**—We have, but it is dependent upon the goodwill of the industry to a large extent, it is dependent on the willingness of our supervisors to go the extra yard, and in some instances it is dependent upon the generosity of those industries in funding this work. They feel as if they are making a greater commitment to it than they should have to.

**Ms Palmer**—We have co-supervision arrangements with industry partners as well. That is quite a significant impost on the partner organisations, but in some of the partnerships they are very committed to the whole research program. In that regard it is successful, but growing the program is constantly about getting the funding to do it. We do struggle to support the number of the scholarships we have with incoming grant funding.

**FRAN BAILEY**—Do you see greater degrees of difficulty because you are a regionally based university? I would classify you as regionally based.

**Ms Palmer**—We definitely are regionally based.

**Mr Maconachie**—It is not so much about being regional. There are some advantages in being regional because you tend to work more closely with your community. In broad terms—I am not talking about the specific issue of funding work based research—a major problem for our region in terms of this sort of work is that there are not a lot of wealthy, significant industries in our economy. It is an economy that is dominated by construction, tourism and retail. It is only just developing the professions. There is no manufacturing industry whatsoever. Forestry is an area that has been important in our part of Queensland in the past but it has been in decline and needs a new approach. We are having significant success in working in the forestry area but it is one of the few options that we have to exploit. Another one of our groups is working in the general area of regional sustainability across a whole range of disciplines, but they are doing research that is not often supported by industry grants of any sort. And we have a group that is developing research into issues of property and asset management related to the work of developers on the coast, which is obviously a very large component of industry there too.

We have put a lot of time into looking at our economy, and looking at where there is money and energy, and where we can go to those parts of the economy and say: ‘What are your issues and how can we work with you to solve the sorts of problems that you have that require research answers?’ But we have just about run out of options because of the nature of the economy. So the issue is not about being regional per se; it is about our region.

**FRAN BAILEY**—It is a bit like the chicken and the egg, isn’t it—your location plus the fact of the lack of industry? If you are going to get this greater collaboration and more flexibility it would seem to me that the very fact that you are a regional university would militate against that.

**Mr Maconachie**—Yes, and that is partly why, in the early days, the vice-chancellor wanted to set up the innovation centre. It was clear that the future for the economy of the coast was some form of the knowledge economy and that IT would be an important part of driving that.

If I could just go back to the question of regionality from another angle, the really serious limitation for us in relation to research training is the fact that we are new and small. Our capacity to compete on a level playing field under the research block grants and particularly the Research Training Scheme is impossible. Each year we are dropping back by the maximum five per cent in our Research Training Scheme allocation because we do not have critical mass with our higher-degree-by-research student body, so we are sort of trading ourselves out of existence each year at the moment. We are cobbling together whatever resources we can from any other part of the institution to try to build up a critical mass of research student body because the RTS system is built around the notion that there is a level of size that you need to have in order to continue to grow.

**Mr RAMSEY**—Could you explain that a little bit more. I am not fully sure I understand why you are losing five per cent a year.

**Mr Maconachie**—The formulas that drive the Research Training Scheme are about having equity in the pool of funds that are available to support research training. Our equity is sufficiently small, lacking in critical mass, that we cannot compete with the formulas. We just do not have the size and the number of completions each year which are really the primary driver to increase the monetary source that we are able to get out of the pool. Our equity in the pool is small and getting smaller.

**Mr RAMSEY**—So as a fairly new university you are given a starting amount and then because you are not reaching your targets you are losing five per cent of that year?

**Mr Maconachie**—No, there was no starting amount. It is a complex formula and the concept is that there is a pool of resources and each university has equity in it to the extent that it performs. We only get the amount of money that we earn through completions, winning research grants and refereeing publications. Because we do not have the critical mass, the size and volume of those things, the formulas work against us so that we are not achieving at a high enough level to stay stable. That is why there is a five per cent cap on the amount to which any institution can lose money each year, because there are several institutions in the country in the same boat. We would probably be in the toughest situation, though, in terms of size. It is not possible for us to get from where we are to critical mass in order that the formulas start to work for us instead of against us without us using all of the resources that we can from other sources to cross-subsidise our research training enterprise.

**CHAIR**—Is that why you have advocated for an increase in the research training?

**Mr Maconachie**—Absolutely.

**CHAIR**—What sort of an increase do you think would be enough to address some of the issues? It seems to me that, with institutions such as yours, none of them would have any hope of meeting the demands of the formula if they are not supported in those early stages.

**Mr Maconachie**—Perhaps I would take back my answer to your question to start with, that that is the reason that we have submitted for more money. The reason that we have submitted for more money is because of concern for the research training system in the country. You will have received a number of submissions, including the one from the deans and directors of graduate studies, which shows that there has not been an injection of resources into research training in Australia that is commensurate with, for instance, what has been put into the undergraduate component of higher education. There is pretty clear evidence that Australia has disinvested in research training over the last decade and I think that is a serious issue for us economically and, as a nation, culturally as well. That is really the main reason that we think research training should be reinvested in, because it is important work for the country to do. I have lost track of the main point of your question having gone back to there.

**Ms Palmer**—It was about what we need.

**CHAIR**—I understand that you are talking about a broader situation which applies right across the board but you also used your situation as a very personal example.

**Mr Maconachie**—For us, what we are looking forward to is the possibility of being able to negotiate a specific contract with the government on, say, a triennial basis. It has been given the working title of ‘compacts’ for the time being, which would be mission based, where we could negotiate the whole resourcing arrangement for the university on the basis of what our strengths are, what the purpose of our institution is, what it needs to be doing for its place in the sector, and be funded properly for that work. At the moment we are competing with institutions that are not like us and that are operating under quite different conditions and different circumstances on a level playing field, and it is almost impossible for us to succeed on that basis. We need

conditions of engagement to change so that we can get the resources to fund the work that we see as being our mission.

**CHAIR**—The formula of the Research Training Scheme needs to be changed; is that what you are suggesting?

**Mr Maconachie**—We would hope that it goes away entirely in the context of compacts being the basis on which universities negotiate resource agreements with the Commonwealth.

**CHAIR**—In favour of more direct funding—

**Mr Maconachie**—In favour of more direct funding that is mission based.

**CHAIR**—between the institution and government?

**Mr Maconachie**—Yes.

**CHAIR**—So the institution gets the opportunity to set, more or less, the framework and the parameters and priorities rather than having them imposed.

**Mr Maconachie**—Yes. Our research mission is very much about doing applied research that will develop the economy of the Sunshine Coast. I mentioned forestry. It is an area that is of some importance to the region. We recently received a \$2 million Smart State grant in that area for genetics work in primary production, in forestry and to a lesser extent in aquaculture. That is a very competitive grants program. We think that we can demonstrate that we have capacity and ability to do the work that is needed there, but it has taken us four rounds, four years, to win that grant and I think the cards were stacked against us fairly much. We do not think we should have to work that hard to get the resources into the place to do the work that needs to be done for the benefit of the local economy.

**Mr SYMON**—I am interested in your recommendation No. 3, about splitting HDR completions between pairs of Australian unis to recognise joint provision of PhDs. I do not think it is one that I have seen in submissions up to now, although I may have missed it. I am interested in hearing some more about that and about how you think it could work. Maybe it dovetails into what you have just been explaining about the lack of industry in your particular region. Maybe something like that would be a positive for a university in your situation.

**Mr Maconachie**—Yes. I think you would be aware that all of the incentives and messages in the system to higher education for some time have been collaborate, collaborate, collaborate, and that is collaborate with other universities and research institutes but also with industry. We see that as organically emerging from the nature of our organisation anyway, so we have a perfect fit with that mentality, which leads us to doing projects in conjunction with other institutions and with industry, where we provide co-supervision for higher degree bioresearch students enrolled in the other institution or vice versa. That co-supervision is unfunded, and the rules of the game at the moment do not allow us to share those resources; they all go to the enrolling institution.

**Mr SYMON**—That seems very limiting. You are actually out there trying to expand the scope of what you are doing—make a better package, if that is the right word. Obviously the rules we have at the moment say that the money only goes to one bucket.

**Ms Palmer**—And that creates that tension between institutions and the big fish, little fish sorts of issues. We might and do use UQ academics to co-supervise our students and vice versa. We do provide co-supervision with UQ for their students. But, in a competitive situation, it is never going to work. We will never win an argument with the sandstones of the world about where the completion money goes. It is just a power ratio as well in terms of the sector. So there is no recognition for the contribution that our academics are making to those completions if they are not hosted at our institution.

**Mr SYMON**—Do you have an issue with other universities pinching your PhD students close to completion? Does that ever happen?

**Mr Maconachie**—No. We are all very kind to each other in that regard.

**Mr SYMON**—That is good.

**Mr Maconachie**—But they do pinch our honours students.

**Ms Palmer**—That we do have problems with. That is quite significant.

**Mr Maconachie**—It is not really that they are pinching them; it is that we do not have the scholarships to keep them. Another dimension of the reason we made recommendation 3 is that there is talk of a ‘hubs and spokes’ model of managing research across the nation. If that were to be a genuine merit based process whereby there was the potential for there to be hubs in areas other than Group of Eight institutions, we could support that and we can see how it could work really well for the whole sector and for the economy. I keep mentioning forestry. We could see ourselves being a hub for dimensions of forestry research. We are doing work there that is world class and that hardly anybody else in Australia is doing, and it has applications more broadly than for just our local area. It is subtropical hardwood research, where there is a big gap in Australia’s research track record, and clearly it is of interest in many other regions of the world as well as around Australia. It is also linked with carbon sequestration, so that is particularly useful at this time as well. For this hubs and spokes model to work there need to be more characteristics of the mechanisms we use to fund research and research training that enable collaboration between universities, research institutes and industry to work more smoothly. Once again, a blocker at the moment is that, if somebody gets all the resource for a PhD student, we cannot share it.

**CHAIR**—In the current climate there is a very strong possibility that, by virtue of the way the system is now, the G8 would be able to attract most of the funding, and other universities would have less chance of competing. Is it fair to say that?

**Mr Maconachie**—Yes, and it is currently the situation.

**CHAIR**—But this would just enhance that further?

**Mr Maconachie**—There is a serious risk that, instead of having 96 per cent of the research dollar, they would have 100 per cent of the research dollar. Some Group of Eight vice-chancellors seem determined not to rest until they have all of it. That is not necessarily what is best for the country.

**CHAIR**—I am interested in this because it is obviously an issue. If they did attract 100 per cent of the funding, where would that leave everybody else? It is not just about the other universities; it is about the whole idea of being more competitive, more innovative and more flexible in our higher education system. Wouldn't it jeopardise that?

**Mr Maconachie**—I think so—in all sorts of quite specific ways. If you just look at Queensland, it is the most regionalised state in Australia. If you take, for example, the Smart State money, the regional vice-chancellors in Queensland have demonstrated that something in excess of 90 per cent of all the Smart State money for the last four years has gone into Brisbane. So we are talking about a smart Brisbane rather than a smart state. We need to build the capacity of people to do research in the regions to support industry in the regions if we are going to have any sort of decentralisation of the economy. Queensland has a significantly decentralised economy in some dimensions because it is a resource state. Around Townsville and Gladstone, for instance, it is quite clear that there is major industry that is a significant earner for the state, but we are not investing in research in those industries in those areas. The research dollar in relation to those industries is still going into Brisbane rather than into those areas.

**CHAIR**—How much support is there among the university community for the hubs and spokes model?

**Mr Maconachie**—I think there is a lot of support for it if it is a model whereby hubs can exist in institutions other than Group of Eight institutions.

**CHAIR**—That is pretty clear.

**Mr Maconachie**—But it has a logic if we are looking at the whole sector and trying to make it as efficient and effective as possible. Australia is at a moment in history with its research effort. We have punched above our weight in a number of areas of research for a fair period of time, but all of the signs are there that we are about to lose that position, vis-a-vis the OECD countries, if we do not do something new.

**Dr JENSEN**—I have a couple of specific questions and then a slightly more generic one. How many students have you at your university?

**Mr Maconachie**—Do you mean in total or just our higher degree research students?

**Dr JENSEN**—In total.

**Mr Maconachie**—It would be 5,500 students all together. In the last couple of years, it has moved from about 3,500 students to that point. We are on track to double that over the next three to four years. I think we are the second- or third-fastest growing institution in the country, but from a small base, obviously.

**Dr JENSEN**—I also note that you have a very high number of academic staff with doctorates and masters, so you would hope that, in the future, that would bode well for you in being able to access some of the RTS funding.

**Mr Maconachie**—We are well able to do the research training. We have the qualified staff.

**Dr JENSEN**—This is a slightly more generic question but perhaps controversial. It has to do with increasing the number of IPRS awards. Perhaps the reason for more IPRS awards—and I am not saying that this is the case, but you can make an arrangement for it—is that you cannot attract domestic students. Therefore, if you are not as attractive to domestic students, a push for more international students is the way to ensure that you have adequate research students. But perhaps the way to move forward is to look at ways of attracting domestic students into research.

**Mr Maconachie**—It is a fair comment.

**Ms Palmer**—I think you will find that most institutions are increasing their targets.

**Dr JENSEN**—I am not directing it at you. I am saying that generically. I am saying that this is possibly a reason that it is being done generally.

**Ms Palmer**—And it is one of the reasons because they are fee paying.

**Mr Maconachie**—It is similar to undergraduates. Things are tight. How can we grow the business? Where are the options for us? We have all gone international as much as we can so as to hold the line and grow the business. I was recently at a seminar of senior administrators in Melbourne, which was addressed by Professor Margaret Gardner, the Vice-Chancellor of RMIT. She made an impassioned plea that, in the context of the Bradley review, the higher education sector portray itself not only as generating the workforce for the national economy but as Australia's third largest export industry, and that that message needs to be driven home to leaders of the country and to us. That is really our identity now. We are a significant export industry.

So I think there is more to it than a venal attitude of 'Where can we get the next buck?' in our interest in international students. We, in particular, have an international policy which is quite targeted. We are very specific about the relationships that we build with international organisations. We are focused on broader partnerships as well as bringing students to our undergraduate programs. We are trying to develop research and teaching links with all of our international partners. They are partnerships rather than just acquaintances. The build-up of our high-quality, high-impact research necessarily involves international connections. So there are good academic and educational reasons for that as well.

**Dr JENSEN**—We are seeing a drop-off in interest by Australian students in pursuing research careers and, indeed, in getting into postgraduate study. My concern is that institutions are seeing international students as the lower hanging fruit rather than addressing some of the real problems that they have in attracting Australian students into postgraduate studies. I understand the argument that we are building up the international trade, but my concern is about the longer term. If we do not address the real problem of attracting our domestic students into research, who will our next generation of researchers be in those universities so as to make them attractive to overseas students?

**Mr Maconachie**—I have no argument with your comment. I think that is exactly right. I am not aware of any institutions that are ignoring the domestic market. It would be worth our while pausing to think about why it is that we are seeing fewer students opting to take on research degrees, and I do not think we have done that analysis yet.

**Dr JENSEN**—I think that is a critical question and something that we ourselves have to struggle with.

**CHAIR**—We have been struggling with it. In the course of our hearings and in the submissions it has become obvious to us that there is an issue, and Dr Jensen is absolutely right in terms of the domestic students. But it seems to have its basis and its genesis possibly in primary and most certainly in secondary schooling, which then begs the question: what is going on with education and our attitude towards education in Australia? It is clearly something we would like to see researched, because you have to make decisions and spend money in a manner which is for the overall benefit of this society, not for the next three years but almost as an institutionalised 20- or 30-year plan. It is hard to do that when you know the problems but no-one seems to be able to connect the dots.

**Mr Maconachie**—We have had a declining interest in all the enabling sciences in primary, secondary and tertiary education for such a long time. Because so many of our potential research students are in the sciences, I think there is a direct connection to that. We have been analysing why we have that lack of interest in the enabling sciences and I think we have some answers there. Maybe some of those answers could be extrapolated to this area. We have not really invested in smart ways for a long time in facing up to the challenge that so many students will take an option other than going into the sciences at school.

**CHAIR**—What about the role of the public school sector and its current state?

**Mr Maconachie**—That is a leading question!

**CHAIR**—I think it is an important one because one would think that the public school sector should be leading the way. It is not, and there seems to be an attitude out there amongst kids and their parents that education has become a bit of a commodity, a bit of a lifestyle—in secondary schooling also. There is fierce competition at that level for students, so suddenly the nature of learning and teaching has changed dramatically. You look around and you think, ‘Something’s happened here in the last 10, 15, possibly 20 years,’ which now we are seeing potentially the consequences of.

**Mr Maconachie**—I agree. I think there are large long-term cycles at work here. My perception is that Australia has underinvested in education for a very long time.

**Ms Palmer**—I think underfunding of education in the public sector is probably one of the drivers—

**CHAIR**—In all levels of education?

**Mr Maconachie**—In all levels. And I do not just mean the last decade. I think since the end of the Second World War we have looked pretty ordinary compared with the OECD.

**CHAIR**—That is interesting. Thank you.

**Mr RAMSEY**—You recommend the abolition of the high-cost, low-cost divide. That has come up a little bit before, but it is not consistent in every submission. I would like you to be the devil's advocate and tell me why that would not be a good idea in some people's views. What are the downsides of it?

**Mr Maconachie**—The downsides of abolishing it or of retaining it?

**Mr RAMSEY**—I know it is a counterintuitive argument. People have generally said we should get rid of it; it is costing us across the board. But there must have been some reason for it in the first place, and there would be those who would defend the position. Could you explain what their point of view would be?

**Mr Maconachie**—I think its origin is the assumption that it costs more to do research in engineering than it does in sociology, to pick two examples. I think the argument would be that as the non-science areas become more applied and do more empirical research in teams where they have critical mass and do it in multidisciplinary ways related to real problems in the real world, which is the sort of trend that we have been encouraging, questions of very large datasets and access to supercomputing and therefore to fibre-optic connections and all the rest of it will be very big issues for social sciences and for people doing research in business and in the arts. The nature of the research has changed and it costs more to do that sort of research than what might have dominated those fields previously.

**Mr RAMSEY**—That tells us why we should get rid of it.

**Mr Maconachie**—The difference between the costs of supporting research in the physical sciences and the costs of supporting research in the social sciences is not as much as it used to be.

**Mr RAMSEY**—So you think no-one would be arguing to maintain that low-cost, high-cost divide?

**Mr Maconachie**—I do not know. I think there is not a lot of basis on which anybody would argue for it.

**Ms Palmer**—But people are arguing for it and it is most likely I suggest about the perceived costs of science and engineering in particular.

**Mr RAMSEY**—So am I to assume that someone who is very strong in, say, the engineering sciences may well argue to leave the status quo?

**Ms Palmer**—Yes.

**Mr Maconachie**—Yes.

**CHAIR**—This conversation is very inspirational. It can take you to places that you perhaps had not thought of going. It has been very useful, thank you. Thank you for the opportunity to

speaking with you. Certainly some very interesting issues were raised in this dialogue. We all look forward to how this gets put together and how we can respond to it. We do understand the importance of this, make no mistake about that.

**Mr Maconachie**—Thank you very much for the opportunity.

**Ms Palmer**—Thank you very much for your time.

[11.43 am]

**CUMMING, Professor Jacqueline Joy, Dean, Griffith Graduate Research School, Griffith University**

**CHAIR**—Welcome. Although the committee does not require you to give evidence under oath, I advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. Thank you for your submission. I now invite you to make a brief opening statement before we proceed to questions.

**Prof. Cumming**—I would like to make some general comments about Griffith University and the submission to the inquiry. Griffith University was founded in 1975. It is a member of Innovative Research Universities Australia. It is a university founded on modern precepts of academia with a research intensive focus. It has grown since 1975 to be Australia's ninth largest university by student load. It is now one of the most comprehensive universities in terms of disciplines of study and research, with commitment across the spectrum from medical and public health training and research to the creative arts while maintaining and strengthening our original commitment to arts and environmental sciences.

In research training Griffith University is committed to its philosophies of interdisciplinarity, globalisation and contribution to the community. I do not want to elaborate at this point on the submissions that have been made from various sources about major issues in research education—and that is our preferred term over 'research training', in recognition of the generic attributes of an RHD graduate and the diverse employment outcomes of many graduates—although I will mention the submission points.

It is important to recognise that in some respects Australian domestic research higher degree students are amongst the most privileged in the world. I think we forget too often to say how fortunate some of our students are. They are taught in universities which are homogeneously of high quality with well-credentialed staff. They are provided with free education. Many are able to obtain tax-free stipend living scholarships. Such conditions do not apply across the world. However, in the current economy these conditions are not sufficient to attract an increasing proportion of domestic RHD students.

The issues raised in the Griffith University submission and in submissions by others include the following. Domestic RHD enrolment numbers are declining and we believe it is because there is a booming economy with high-paying job availability. APA scholarships change by 2009 and cause serious hardships for students. RTS funding does not support all domestic RHD students enrolled in university. RTS and APA funding time lines need to be extended to represent the reality of student completion times and to enable broadening of the RHD experience. RTS funding does not cover the full cost of RHD education, and student research projects are often dependent on project funding obtained by researchers. There is a concern underpinning this inquiry that we will have a shortfall of academics in the near future and there is the need for mechanisms to attract high-quality international RHD students to Australia.

I would like to provide a brief picture of the RHD cohort at Griffith University. We have approximately 1,300 academic staff. We have approximately 1,300 RHD students. Clearly, our research students make a major contribution to our research and to the community. Fifty-six per cent of our students are full time, but 44 per cent are part time. Approximately 17 per cent of our enrolments in 2008 are international students, but the new international student commencements in the first half of 2008 are approximately 25 per cent of new enrolments, with a decline in domestic enrolments. We offer 300 mainstream scholarships such as the APA one or equivalent, but more than half of these are funded by the university. Our average completion time to graduation is 3.8 years—below the national average, but this time varies according to discipline background.

This inquiry is happening at a time when RHD education must face the future. At Griffith University we are exploring our RHD education frameworks right at this time. Two major issues are being addressed. The first is that more than half of new students now enter without the Australian traditional honours degree. Half of our students enter from a postgraduate coursework masters background. We spend a lot of time determining honours equivalence, making judgements against what internationally has become an anachronistic gold standard. International students affirm the Bologna framework in terms of their expectations for entry.

The second issue is the need to broaden the experience of RHD students in addition to the disciplinary depth they gain in their research. This is in recognition of both the expectations of the contemporary world and the different employment sectors that graduates will enter. We are currently considering five optional pathways to broaden RHD experience: a commercialisation and entrepreneurial pathway, a communication and research dissemination pathway, a higher education teaching pathway, an international collaboration pathway and an industry internship pathway. These are things that we would like to be able to add to the RHD experience to give it more breadth. However, broadening the experience brings us back to the core issue: such activities may increase the time for completion and be unattractive for students and unfunded for universities. Moving in these directions may depend on recognition through this inquiry that these are valued enhancements to the traditional Australian research education experience. Thank you.

**CHAIR**—Thank you, Professor Cumming. Firstly, can I get clarification. Did you say that having different points of entry for students into higher degree research is inconsistent with what is going on internationally?

**Prof. Cumming**—Yes. At Griffith University we look for an honours equivalence for a PhD or a doctoral program of honours 2A or above—honours 1. Honours as we know it in Australia exists virtually nowhere else in the world. We have large numbers of international students and now we have a lot of domestic students who are coming through postgraduate coursework masters, so we are always looking at what has been their research experience and at what quality. So we are increasingly using as our benchmark something that is in the minority.

**CHAIR**—What are some of the other entry points internationally? Could you help us understand how the framework is different.

**Prof. Cumming**—The Bologna framework is basically from a coursework masters. I think this is fairly common internationally. So you have done a coursework masters and then in your

first year of your doctoral studies you would be gaining your provisional or preliminary research status, with more coursework training in the first year and more research skills building.

**CHAIR**—So honours is not worth preserving?

**Prof. Cumming**—I have no problem with honours being preserved. I am not sure that it is necessarily the most salient pathway in the international arena. I am not sure what international audiences make of a student who comes out of our universities with a very good honours degree because in other countries an honours is based on GPA. In England it can be as low as a 65 per cent pass mark. So the comparability there is always an issue.

**CHAIR**—A 65 per cent pass mark overseas?

**Prof. Cumming**—Yes. The English are hard markers. In China it is more like 90 per cent. So employers are not clear of the value of an honours degree.

**Mr RAMSEY**—We actually have two streams in Australia. Some disciplines would give honours on your pass mark.

**Prof. Cumming**—Two or three disciplines, mainly law—

**Mr RAMSEY**—Engineering?

**Prof. Cumming**—With engineering and with most programs that I know of the students are doing substantial dissertation and some research work.

**Mr RAMSEY**—My daughter got honours just by passing, at a level.

**Prof. Cumming**—At which university?

**Mr RAMSEY**—Adelaide.

**Prof. Cumming**—The Queensland models I know are not GPA—

**Mr RAMSEY**—That is what I am saying—we do have two systems, which obviously muddies the water.

**Prof. Cumming**—We do. And in any university you will find you actually have three systems.

**CHAIR**—That is interesting.

**Prof. Cumming**—Can I add that there may be some point—and we do have some areas—where students might do a masters which has research foundation training, and that might be as good an end-on experience as an honours which they miss in their first degree.

**CHAIR**—I am going to go to that part of your submission that recommends that 40 per cent of all commencing PhD students come from overseas—presumably within the next five years?

**Prof. Cumming**—Sorry, 44 per cent of our students are part time.

**CHAIR**—No, the recommendation here that 40 per cent of commencing PhD students come from overseas within five years. I find that figure really high. We are struggling to find some sort of understanding of the balance between the need to attract international students, for the reasons that have been submitted to us, and also the need to recognise that there is a problem with domestic students. It may not be just the economy. It may be a series of other things as well. We are trying to get a balance so that one is not promoted at the expense of the other, which could leave us in real trouble in the next 20 years.

**Prof. Cumming**—It may not be promotion at the expense of the other as much as in addition to the other. If you have students who are coming, students who are paying fees, you can have more staff so you can have more supervision capacity. However, I think universities have gone through a change in the last 10 years. Initially, international students were seen as essentially being income—no holds barred, that was what we were after. But now we are realising that you need international collaborations and that with a student who has a good research experience in Australia if they stay that adds to our knowledge or if they go home that gives us a bridge into future research collaborations and industrial activities in another country. So we see internationalisation as a very important part of what we are doing. Globalisation is an important part. Therefore, looking for a substantial number of good quality international students who think Australia is the place to come to will actually enhance our industry training.

**CHAIR**—I refer to the example that you have cited of the butterfly collector who is now in Harvard—which is terrific. I am just wondering how that has enhanced our capacity to attract perhaps interest from the United States.

**Prof. Cumming**—With those people in situ, you find somebody goes along and writes about it and somebody will read about it and somebody else will read his story and say, ‘Australia.’ They are word of mouth experiences.

**Dr JENSEN**—I have a comment as to this issue and it is something that I have put to the previous group. You have got a rationalisation for taking in more and more international students based on international collaborations et cetera. But couldn’t the argument also be put that what is occurring is that the universities are failing to attract domestic students into research careers? Therefore, the low-hanging fruit means going and attracting international students instead, and universities are maintaining their research effort in that way. But in the longer term that could actually disadvantage the entire sector, given that we would be looking for our next generation of researchers to continue the training.

**Prof. Cumming**—There is some English research that we were not able to cite in our submission that has looked at students from England who had a research experience in the USA. A fair number of those students who had their research higher degree experience in the USA put down roots, developed relationships and stayed. We do not want to get into international poaching, but you will actually increase our population of well-educated migrants by having

international students study here. We would not like to see a decline in domestic students. We would like to see methods for increasing our number of domestic students.

**CHAIR**—I am assuming that the university sector has not resigned itself to the so-called decline in domestic students and is looking for other ways of meeting the needs of the university—if it is not going to come from domestic numbers it will come from somewhere else.

**Prof. Cumming**—We have not had a huge decline at Griffith. I guess I am talking on Griffith's behalf. We look more proactively at what we can do. We go and talk more to first-year and second-year students. We write to students who have a good grade point average and say, 'Have you considered research studies?' We are looking at more of those support mechanisms. I think there is a concern that Australia as a whole does not necessarily value people with a doctorate. I do not know that industry as a whole values people with a doctorate in Australia. You hear stories of students who in the end decide they should put down that they have done three years backpacking in Thailand rather than admitting they have a PhD in order to get a job. The reason we gave our example about a Harvard butterfly collector is that the US is facing a bigger concern than we are because of their changing demographics in universities. They have been doing a lot of advocacy work in terms of: what is the benefit of the RHD to a country? What is the public good from an RHD? I think we need more of those generic campaigns, if you like, to promote why you would do an RHD. We need to bring industry on board on what is a benefit to them.

**CHAIR**—I agree.

**FRAN BAILEY**—Thank you very much for your submission. You have raised a number of issues and have given us a different perspective. One of the other issues you raised in your submission which I am particularly concerned about also is the opportunities for commercialisation of research. Can you just elaborate on that little bit more.

**Prof. Cumming**—Specifically?

**FRAN BAILEY**—You have raised it as an issue. I agree that it is an issue. I think it was raised indirectly by one other witness before the inquiry but you raised it specifically in your submission. I think what you were really saying is that you are wanting more opportunities and you see these opportunities for commercialisation as important.

**Prof. Cumming**—Fifty per cent of research higher degree graduates in Australia do not enter universities as academics. That is the old pathway. Fifty per cent of students are either in employment or going into some sort of industry employment. So we see building liaisons with industry and the community as important. The commercialisation training scheme was a bit of a bandaid. It was a good idea, so some funding came to the university and we promote it heavily to students and supervisors. We think it is a good scheme; we can see the benefits to students. Students do not necessarily see it as to their benefit because it takes longer. They have not appreciated it. Supervisors say, 'If my students are going to take longer, it is going to interrupt their studies.' So we are saying, 'Are there other ways that we can start looking at systems to build such as the public space model being used in England or the knowledge transfer partnerships?'

In my presentation I have suggested that we would like to have a mechanism where students might have an industry internship where perhaps in their last years they are studying half the time and half the time doing the internship. Building that is a priority. Some students do very well commercialising out of their research. We had one student graduate about two years ago with seven patents out of a fairly quick degree. But, overall, building that industrial linkage and community linkage is what we would like to see more of.

**FRAN BAILEY**—Without putting words in your mouth, what you are really saying to us is that this is another aspect of getting more flexibility into the overall model.

**Prof. Cumming**—More flexibility and more broadening of experience. Again, this is international recognition. The PhD is very good for giving depth. It does develop some very good generic skills, but students need to have a lot more experiences. An employer wants a student who has teamwork experience. Half of the RHD students work on their own, with a supervisor—that is their team. So we need more opportunities to provide commercialisation.

**FRAN BAILEY**—Would you also see this as a means of addressing the problem of the ageing academic workforce? While people identify this as a problem to us, no-one is really coming up and saying, ‘Here’s a strategy that we think can assist for the future.’ Just as you have correctly identified, we do have an issue with domestic PhD students and continuing innovative research, but we have also got the elephant in the room of the ageing academic workforce. If we are able to come up with a much more flexible model which is opening up more rewarding opportunities—in terms of both the supervisory nature from the academics and increasing knowledge and the transfer of knowledge—would you see this as another means of addressing this issue?

**Prof. Cumming**—Many universities are using adjunct supervisors from industry now, so we have those sorts of linkages. It is a way of bridging. If a scenario you are proposing is an academic who might be part time in the industry and part time in the university, that is a very interesting path to follow. I think the main concern will be that, once students have had experience of industry and the salaries that they can receive, if they are still able to pursue their areas of interest, they may never go back to the university.

**Mr SYMON**—My questions relate to the two systemic issues you listed at the end of your submission. The first one came up from the last witness—about joint PhD student funding between institutions. I am interested to hear your views about how that can assist the completion, or indeed the whole knowledge experience—or is it something more than that?

**Prof. Cumming**—We can have a joint agreement with a university internationally; we cannot have a joint agreement in Australia and share the RTS funding and the completion funding. University academics will often supervise somebody from another university, but it is done pro bono and we exchange. To be able to have a cross-institution enrolment and a sharing of the RTS, bringing experts together from more than one institution, is going to be in the students’ interest. They are going to get a stronger experience. It is going to enable research collaboration. We can do it internationally, but we cannot do it domestically.

**Mr SYMON**—The second issue you have listed there relates to a question I asked the last witness as well, but you might be able to fill it in a bit more. It is the issue of other institutions

knocking off your PhD students close to completion. Has that happened to you, how many times and what is the effect of it?

**Prof. Cumming**—It has happened very recently. There is an agreement amongst universities, particularly amongst people in my role, that we do not poach. It is not in the students' interest. We had a student about ready to submit who received advice, we believe wrongly, that they would have a stronger case if they went to another university because it had certain accreditation. The other university did accept them, which is very unusual. We have recently had a student apply to us who says they are a few months from completion and their supervisor has left the university. They do not want to go to the institution the supervisor has gone to. We put a lot of effort into toing and froing with this student to make sure that this was in their best interests. With a student who indicates they are six months from submission, it is probably going to be 12 months. The impact is that you have put all of that effort into a student's work and a student's supervision and at the end of the day you will not see the completion funding, which is a major part of the funding. The RTS funding and the completion funding, the analyses show, do not really cover the RHD experience. So you put a lot of work in and it leaves a very bad taste in everybody's mouth.

**Mr SYMON**—If the RTS funding was changed and there was more upfront rather than at completion, would that still be a problem, just from a financial point of view?

**Prof. Cumming**—That would possibly address the poaching.

**Mr SYMON**—It would not address the moral side of it?

**Prof. Cumming**—There is not a huge amount of poaching; it is just something that we do not do. Sometimes we hear by word of mouth that a student is going around shopping. There is a danger, though, in more upfront funding, in that you want to encourage your supervisors to have the completion.

**CHAIR**—Who is doing the shopping—the students or the university?

**Prof. Cumming**—We had one or two students who were shopping around for an institution, but people became aware of this.

**CHAIR**—Was it because they did not like where they were or they did not feel that they would get anywhere where they were?

**Prof. Cumming**—They were having difficulties where they were, with their candidature

**CHAIR**—Was the issue that they were not going to pass? It is good to be clear about what the issue is.

**Prof. Cumming**—It was not necessarily that they would not pass. The university was saying they needed to do more work and their work was not ready to go, and they thought if they went somewhere else another university would submit it.

**CHAIR**—Because they would get the money in the end?

**Prof. Cumming**—That university would, yes.

**CHAIR**—It is very out of order. Thank you, that was very interesting. It is certainly not something that has been raised before.

**Prof. Cumming**—I would like to draw attention to recommendation 3, which I had hoped you might raise, which is that, if students leave their undergraduate degree with a considerable debt, they see it as very frightening—

**CHAIR**—The remission for the HECS?

**Prof. Cumming**—to then go into studies and not gain on their debt. If we had a mechanism whereby we could say to a student who completes an RHD program, ‘We will now give you remission for your HECS debt or tax rebates if you’ve paid your HECS debt,’ we think that would be a very strong incentive to students.

**Mr RAMSEY**—Would that in effect be any different to a higher stipend? In the end, either you have a debt or you do not, and one is a tax rebate and one is not. In the end, wouldn’t it be better to say, ‘Here’s some more money?’

**Prof. Cumming**—Everybody is being very conservative in asking for the stipend to go to the APA rate of \$26,000. That is still not a very large amount of money tax free, so it puts a lot of strain on students.

**CHAIR**—That is true.

**Prof. Cumming**—For those who are extremely committed it is good, but they are leaving with a debt that is much higher than an extra \$5,000 a year for three or four years.

**CHAIR**—In some other submissions the idea has been raised of giving students an opportunity to remit their HECS. I can see how that would be attractive to students. Obviously it is a very important recommendation coming from you. I did see it; I just overlooked it in terms of the poaching that was going on. Thank you for that. That point has been made on occasion.

[12.09 pm]

**FITZGERALD, Professor Brian Francis, Private capacity**

**CHAIR**—Welcome. Do you have any comments to make on the capacity in which you appear?

**Prof. Fitzgerald**—I am a professor of law at QUT Faculty of Law, but I appear here today in my personal capacity.

**CHAIR**—Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We thank you for your submission and now invite you to make a brief opening statement before we proceed to questions.

**Prof. Fitzgerald**—Thank you. The primary issue that I have sought to raise in my brief submission to the committee really concerns the need to address how we mentor, nurture and build a really dynamic cohort of junior researchers within Australia. I am not sure that that is something that you have heard before in the submissions but I expect that it has come up. I speak from my own personal experience as a student, as a researcher and now as a leader of a fairly large research team. The difficulty that I face in attracting high-quality researchers is quite apparent. I come from the legal area and one response to that is that people can go off and make better money with law firms. We have a fundamental issue here: a research career, whether it is in law or any other discipline, in many respects does not have the same status as going into industry and being paid well. To some extent I believe that the role and the image of a high-level researcher, particularly at the junior level, is not very well regarded or represented to the general community, particularly to those who we want to attract.

I have benefited from studying overseas. I chose to come back to Australia and work in the Australian academic and research system. I feel that I have brought benefits back with me. I do think that it is incredibly important for our younger researchers to engage internationally, whether as students or visiting researchers, but it is also incredibly important that we encourage a good proportion of them to see the benefit in coming back to Australia, to build on their research back in Australia and to develop those links that they have made overseas. In my submission I have set out a number of different strategies that could be followed to improve that situation. I do think that there could be a national cohort. The federal government has announced the Future Fellowships for a certain level of scholar. Whether it is in planning or prospect or whatever, there is a real need for some sort of national fellowship or program around those junior researchers to give them status and to give them some reinforcement and vision in what their role is within the research sector.

A number of those things are raised in the submission but I would like to raise a couple of other points very quickly. One of the other problems that we have, besides trying to attract good junior researchers and then properly develop them, is the intersection that we have with industry.

There is a great divide between industry and research in many aspects. At some points they can work very well together; at other points they can work very poorly together. The status, once again, of high-level research and the adoption of that by industry, whether through some sort of partnership or through some process of allowing researchers to move more freely between research sector and industry or government sector, is really not a very well-developed pathway in Australia. I know from my discipline that it is a great joke that we can point to high-level lawyers in private practice making a million dollars a year, whereas the high-level researchers barely make \$100,000 or \$200,000 a year. There is certainly a disparity in the income and the status that high-level researchers have. One of the ways of addressing that is also to see more engagement between high-level research and industry, particularly through placements and through other types of engagement.

There are a couple of other things that seem to be incredibly important. The other day I was in Canberra at a meeting of the digital education revolution—the DER—that is being rolled out by the Department of Education, Employment and Workplace Relations. That process of teaching kids in school about technology and how they are going to use it—and it is not only the technology but also the content—and how they are going to exchange ideas is all incredibly important for our future generations of researchers. I would like to think that that project, as it progresses, has an imprint to some extent of this whole innovation agenda and the improvement of our research sector within it.

Someone mentioned the school level before and that seems like an incredibly exciting project which will be rolled out over a number of years, but also it is a very good opportunity to teach and allow school kids and their teachers to experience basic research techniques. Some of those generic skills now are really important in the research environment. I think I might leave it there. The primary purpose of my submission was to highlight what I think is something that needs addressing and that we can do better at—nurturing a cohort of very high-level Australian junior researchers through a number of initiatives.

**CHAIR**—Thank you. That is a very interesting concept and one that has come up as a first, so I am sure all of us would be interested in asking you to take us through some of your thoughts on that. I will start off by putting to you that what you call ‘junior researchers’ is what we call ‘domestic students’. We are grappling with how we can actually assist in energising young Australians to pursue research on the one hand while, on the other hand, universities such as Griffith University have indicated that they would like to see a 40 per cent increase in the number of international students who come to Australia in order to arrest the decline of domestic students. They argue that it is not just about money; it is also about enabling that international contact and being good ambassadors. The argument is that we are all going to be networked and that will be good for us and good for them. How do you see the possible development of international students working with the idea that you are putting forward of developing a cohort of junior researchers? Do you see it working? It is not a new concept for us—but I am interested to explore the interface between those two.

**Prof. Fitzgerald**—That is a good point. I have a couple of foreign PhD students, who I do respect very highly, and I think they bring great value to the system. I think there is no doubt that we need to have international students coming to Australia. A proportion of them will stay and a proportion will go back to their home jurisdictions. But we do need to develop our own PhD students and that is a problem for us at the moment. There is no doubt that the foreign students

are certainly coming in in large numbers. I think that one of the things we have to do, if we are serious about developing a cohort of junior researchers, is to have adequate resources to put effort into that and also to allow those people to have serious engagement with some of the foreign students that are coming in. I am not sure that that is necessarily happening but I could be wrong. I suppose fundamentally I see the value in bringing international students into the country. I do not have the exact figures, so I am not expert to talk on that.

I also want to see at the same time the home-grown students being given an opportunity to prosper. Where we are experiencing this is not just at the student level but with people who are coming out of degrees and not taking research careers as a serious option. Pay rates are a perceived problem but, if you are really passionate and committed, you will probably give it a go. The status and the short-term nature of the appointments is also another big problem. Most of these appointments are grant driven which means that you are actually appointed for a fixed term—it could be 12 months or three years at most. Although younger people today seem to be able to handle change a little better in terms of employment certainty, it is still very unnerving to think that around the corner there is so much uncertainty about your future in a particular position and how much effort and commitment you should make to that position when within a few months you could be out of a job and looking for another one. I think that is one of the problems. I have probably digressed a little bit there.

**Dr JENSEN**—On the issue of the cohorts, I am having a little bit of a problem seeing exactly what that is. How many people are we talking about, in what field, how do you identify them and how do you they work together?

**CHAIR**—Who drives and funds this as well?

**Prof. Fitzgerald**—I think it is a good question. I think that, if you go through all of the institutions whether they have been decentralised for a purpose or not, they will all have their own honours schemes. Whether they are undergraduate or postgraduate students, there will be some sort of dean's honours students. Within a university of young career academics, you will have some young career academic programs. But, to a large extent, they all seem disconnected and largely disjointed. I cannot give you the exact numbers.

I think you have to have discipline awareness, but I do not think these need to be discipline specific. I think that what we are trying to see and promote in Australia is the interdisciplinary abilities of our graduates to solve, as we say, climate change, Indigenous health and whatever big issues face the country. We want to produce graduates who have an awareness beyond their disciplinary boundaries, as a cohort—as senior researchers do; they get together in conferences, societies or academies, and they try and exchange their ideas at a professional level. I do not think we do that well enough for the junior academics. I think it would have to be an initiative of the federal government and that we would have to give it some shape or form. I suppose the Future Fellows are an example of something that is happening at a national level where you are trying to bring some sort of national policy together around how we bring world-class researchers together.

I suppose, thinking of that at a lower level as to how we bring people into the system—and some of them may drop out of the system and some of them may continue—I just do not think we are giving them enough incentive to come into research careers. If someone said to me,

‘There’s a national scheme that has a nice label with real substance behind it; do you want to be an Australian junior researcher or XYZ?’ it might say to me that that is something that I would like to lock into. At the moment you are probably something like a research assistant, a research fellow, a part-timer, a casual or whatever. Your designation from year to year or from month to month is very much driven by grants, and I do not think there is really a national image of our junior researchers.

**CHAIR**—Would it be useful to include remittance of HECS fees in such a strategy?

**Prof. Fitzgerald**—Wouldn’t that be good! I think you would have to think about incentives, and something like that would be very impressive. Those incentives might be to assist people to do some travel overseas, they might be to have some fee help, they might be to assist with publication or something. I suppose you would have to find out, and think a bit more about, what would be workable. For the people whom I see coming through, what do we do with someone who is really bright? In law terms, if you are the best student then you will probably take the route of being a High Court judge’s associate and then you will go overseas and do a master’s. If we see you back in Australia, you are likely to be at the Sydney bar and we have probably lost you to the big money of practice. So what we want to do is to encourage people, particularly in law but in other disciplines as well, to really understand and appreciate that there is a really important and, I think, desperate need in Australia to value the generation of knowledge and the exchange of ideas at a very high level. That has to be fed back into industry, government and so on. So I suppose that is the sort of thing that I think we could improve upon.

**CHAIR**—I guess what you are really saying to us is that the model that you are suggesting to us is one that is based on much greater flexibility and on getting away from that very confined structure that we currently operate in. I know that you were present when I asked a question of the previous witness about opportunities for commercialisation. Given your particular discipline, I will ask you about IP issues as well. Could we have your views on that.

**Prof. Fitzgerald**—Yes. I think that there is a real challenge, not only in Australia but also throughout the world, as to what role governments and publicly funded research institutions and universities should play in commercialisation. There are different approaches to this. One is that we want to pay people in universities well and then we want the knowledge to flow out of universities into industry so that industry rather than universities can do commercialisation. The other school of thought is that universities and governments actually have a role in the commercialisation process. I am not really expert enough to say that I believe one trumps the other.

People often give the example of Stanford University, and the approach it has taken to Silicon Valley, which is: let the knowledge flow into industry and let us see what industry can do with it. I think you have to have a managed approach to whatever you do with commercialisation but, yes, securing intellectual property in a positive sense and managing it properly is incredibly important to Australia.

I am also well known for my approach to intellectual property, which is more connected with what you might call ‘open innovation’. So I also take the approach that while it is important to hold intellectual property, sometimes we will manage it for traditional commercial licensing gain or development and other times we will manage it more openly for the public good. I think there

are different strategies that you would pursue in different times. There is a classic example given in a book. It happened in North Ontario, in Canada. People may have heard of this one. I thank my sister Anne, who is here with me, for pointing it out to me. In the early 2000s, a big goldmine—the Red Lake goldmine in North Ontario—said, ‘We want to better utilise the hundreds of acres of mining land we have got here and find the next gold deposit.’ A very entrepreneurial CEO said, ‘Look, we don’t have the knowledge within the company so we’re going to disclose all our secrets to the whole world and actually give some prizes to the brightest people in the world to come up with the solution and tell us where the next gold deposits are on our land.’ And lo and behold, a company in Perth, Western Australia, without setting foot outside the country, through their geographical visualisation technology pinpointed where the next deposits would be and won themselves, I think, US\$100,000. Of course the mining company probably made billions of dollars out of that discovery.

So there is a whole new networked environment in front of us. Yes, commercialisation is important and commercial revenue is important, but how we put that package together is changing rapidly. So while I think it is important to talk about commercialisation we also need to understand that it is a changing landscape that sits before us. Traditional models are still important but we also need to adapt to this idea that one person does not know everything. Sometimes we have to collaborate and ask for people’s help, but how do we fit that into a commercial model? That is what the people in North Ontario did by saying, ‘Look, we’ll just throw the dice,’ and it came up trumps. In other instances I am sure you could throw the dice and maybe it would not be so good. But how do you manage that? That is not necessarily my portfolio. It is something I am interested in, but there are many managers throughout the research sector and industry who are much closer to that issue than I am.

**FRAN BAILEY**—Could I just ask one quick follow-up question? It was put to us over in Perth that the most enlightened way to address a number of IP disputes is by having an expert panel of mediators rather than going through the traditional legal process. What would be your views about that? Fancy asking a lawyer that question!

**Prof. Fitzgerald**—The traditional lawyer answer: it depends on the circumstances. There are values in it. One of our other projects is around streamlining contractual and negotiation strategies in the research sector. One of our biggest inefficiencies in research—and I think this was highlighted in the recent CRC report by Professor O’Kane—is not being able to agree quickly enough and get on with the job. We now live in a research environment fuelled by a networked ICT world called e-research, where people can collaborate by the click of a finger in a serendipitous, unplanned way. Average contracts take us nine months or a year to conclude, whereas in some instances the research has well surpassed the contract. So I think one of the things we have to do is get the legal agreements done better. There are a number of submissions around how you can do that. One of them is working out in advance some clear policies about IP ownership between the different actors. So before you even get to lawyers, mediators or dispute resolution people the proactive thing is to start at the front and develop some sensible policy about which of the stakeholders should be getting the IP, have we got any national policy on that, and what do we want to do here on the innovation agenda? Then, as you come downstream, perhaps the mediation can work. I am really probably not expert enough in the mediation area to say, but I think it is certainly worth serious consideration.

**Mr SYMON**—I want to go back to a question I have explored before but which previously was in terms of PhD students. You are talking about junior researchers having adequate infrastructure, including suitable work spaces. We have previously heard evidence of PhD students not having their own desk or computer. Does that then extend beyond the candidature and into full-time work at the university itself?

**Prof. Fitzgerald**—That is a really important question. It is a big issue. For universities, in my experience—I have taught at a regional university and been involved with regional and metropolitan universities—space is a big issue, particularly in the metropolitan universities. I think you would find on many occasions junior researchers working in an environment that is pretty poor. Usually it is going to be in an open-plan environment where they will have a desk and a computer but there is sometimes not much more than that provided. How are we building esteem and some sense of professionalism into these positions?

Should everyone have an office? That is going to create a lot of problems and is going to cause budgetary issues, but there is probably some midway point between that and having our young, bright researchers who we really want to be the future of this country put in an environment that most people outside the university sector would probably think is a bit odd. If they were junior people in law firms, they would probably have some sort of small office at the very least. So I think we that we could do a little better for them, but I do understand that this is all about how what you put in over in this area you take away from the research budget that you are using to undertake your research.

**Mr SYMON**—I think infrastructure is important. If you do not have that there, then everything else suffers. If you have an office that is set up like a call centre, then I imagine your output and your creative thought is also affected. You have noise levels and interruptions that do not necessarily help your flow of thoughts.

**Prof. Fitzgerald**—I am glad you said that about the call centre. My group are quite a lively group; they are young and active. If you are in an open-plan environment, it is very difficult to work. It is exhilarating to the extent that you are there collaborating but, when you want to have some quiet time to write and do those kinds of things, it is very difficult. So we do need to address that as an issue. We fall back to the default position that we just start to accept it. Thankfully, I have an office, so I suppose I forget about it to some extent, but it is an incredibly important thing to this idea of having a cohort of people who take research careers seriously. It gives them some sense of professionalism and respect. We could do better. I tend to agree with you on that, but it is a budget issue.

**Mr RAMSEY**—I refer to your point earlier when you said top lawyers earn \$1 million and a top researcher earns \$100,000 to \$200,000. Given that it is going to be difficult to close that gap entirely, is it a way forward—particularly in law, where we have such high-paying positions outside of academia and research—to look to try to share people with the industry and make them part-time academics, getting them to come back in and give some of their time back to the universities by working on a lower wage structure there while they are still earning good money out in the workplace? Are there impediments to achieving that?

**Prof. Fitzgerald**—Those are all very good questions. Some of the lawyers probably earn a lot more than \$1 million a year and some of them earn a lot less. Some of the academics—a very

rarefied few—are probably earning a bit more as well. So there are probably exceptional cases. I think one of the important things is to make sure that our high-level researchers are given appropriate status and respect, like the junior researchers. We have had the Federation Fellowships scheme in Australia in recent years. No-one has really clarified whether that will run again this year. Those researchers are paid about \$250,000 a year or thereabouts. It was a scheme designed to bring people back from overseas—addressing the brain drain—but it tended to be a mix of people who are here and some few people coming from overseas.

I think there are some initiatives like that that have tried to address this. I do think there could be greater integration in the profession, particularly between the legal area and the academic researchers. There are a lot of commercial impediments, I suppose, to doing that, but, importantly, I think we could have a better legal system and more informed decision-making, both in litigation before courts and in transactional matters, if we had a greater bridge between academic lawyers and the profession. It is not for want of trying; I am sure people have tried before, but I do think we could do better.

I would like to see our best researchers being able to go out into a professional position for some time and come back into academia. Too often, we see that someone gets to about 40 and then they go out and become a partner in a law firm because they are ‘Australia’s expert’ on whatever. I would like to think that they could go out and have that experience but come back into the university, where they are also incredibly important. But they should be serious about coming back to the university and not necessarily just come back too part time, which means that they will come back to do maybe just one aspect of a job and will not really engage with or commit to that job because they are too busy outside. How you do that is very difficult, but if we really want to be innovative and we really want Australia to be the really smart nation, we have to do better at trying to get the flow going both ways.

I will make one last point. One of the things that I was struck by when I was a student at Harvard was that my Spanish colleagues there had a house. I thought that was really impressive, that the Spanish government actually had a location—a physical house—near the university precinct. I know these things are incredibly expensive, but some way of bringing our students together when they go overseas to study at these really high-level universities so that they do have an understanding and an appreciation of the importance of their research back in Australia is, I think, incredibly important. I am not sure if there is anything we can do in that regard but I do think that is also worth addressing.

**CHAIR**—Thank you. That is a very interesting postscript. I guess it goes to the issue of your concern that Australian students who go abroad may lose the sense of their identity and of the value of what they are doing back home, presumably because of distance too. So the Spanish government have a house. I am assuming that students from Spain studying at Harvard could meet there and have a bit of a chat. Is that what was going on? Was it accommodation or was it just a point of reference?

**Prof. Fitzgerald**—Not at Malibu!

**CHAIR**—A Spanish inheritance, yes!

**Prof. Fitzgerald**—I think when you are a student studying overseas you really do need to engage with people from that country, whether it is the US or wherever. You usually get put in some sort of accommodation where you meet people from all regions of the world, which is incredibly fantastic. But I think the significance of the Spanish set-up was that they had a house and that their senior visiting researchers were connected with that. So if they had senior professors from Spain, from any discipline, they were not necessarily based at this place all the time but they had space there. Also, I think the junior people had a sense that if they felt that they were out in the big bold world and that they needed some connection, they could actually engage with that institute or that place.

**FRAN BAILEY**—That is a role for our consuls general.

**Prof. Fitzgerald**—I was just about to say that governments have embassies in different jurisdictions and so on. They do become important when you are overseas, but I think that giving the student body a sense of our appreciation of what they are doing so they are connected back to Australia is important. It might sound a bit wacky but I think that, if you looked at it, you would find that a number of countries do have establishments near some of these big research institutions and they use them as a base for really moulding and developing their expertise in various areas. It is just a thought.

**CHAIR**—It is a very interesting thought, actually.

**Mr RAMSEY**—A house in Spain does it for me, mate!

**Prof. Fitzgerald**—No comment.

**CHAIR**—We would not want to lose you to Spain, Rowan. We would have to establish a house over there to make sure you keep in touch.

**Mr RAMSEY**—They should have one for parliamentarians as well.

**CHAIR**—You have raised a really interesting point. I will not go into the idea of a secretary for the diaspora, although I know that other countries are very effectively pursuing those things in relation to members of their diaspora. Obviously, we have a lot to learn. Thank you very much

**Prof. Fitzgerald**—Thank you, everybody.

**Proceedings suspended from 12.40 pm to 1.35 pm**

**CRITCHLEY, Professor Christa, Dean, Graduate School, University of Queensland**

**LAWSON, Professor Alan, Pro-Vice-Chancellor (Research and Research Training), University of Queensland**

**CHAIR**—Welcome. Although the committee does not require you to give evidence under oath, I advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as the proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We thank you for your submission and now invite you to make a brief opening statement before we proceed to questions.

**Prof. Lawson**—Thanks for making time for us. By way of opening statement, I would like to restate a couple of fundamental principles—at the risk of boring you after a couple of public hearings! I think it is important for us to re-emphasise that a research higher degree program is not at all like an undergraduate or a postgraduate coursework degree. In a coursework degree program there are a number of units of study, and if you complete the appropriate number of those at an appropriate grade then you know you have finished the program. But a research higher degree requires the completion of a research project and the acquisition of a number of generic skills. It can only be assessed once the thesis has been written, once the research project has been completed and the results analysed and once the thesis has gone out for external examination. So it is much more difficult to predict the length of a PhD program than that of an undergraduate program, which requires simply the completion of a certain number of units.

Along the way, it is quite likely and common for the data collection, experiments and preliminary results to require some extra revision of the methodology. Additional data might have to be collected and additional experiments might have to be carried out. I think it is important to say in some cases—and this is true right across the disciplines in the university—that cul-de-sacs or dead ends may be reached and it might well be necessary to change the object of study and analysis to some degree. You might be exploring the efficacy of a particular compound for therapeutic purposes and discover it does not really have the results that were anticipated, so you might need to find and analyse another compound that can be added to it for a much greater degree of efficacy. You might well find in the social sciences that in the particular population of people being surveyed the results do not show up clear differences between the research group and the control group. You may find in the humanities that the archives are simply not there to support the analysis of a particular book, painting or historical period.

It is quite common for research projects to be revised in a variety of ways. In the best possible circumstances what usually happens is that a thesis becomes more focused and narrower, but in many cases it needs to go off in a slightly different direction. It is important that we remember that those changes are absolutely, inherently part of the research process. That happens in perfectly good, well-designed projects.

There are other kinds of things that happen, and I will just give you three examples from PhD students at the University of Queensland. First is a student who has now finally finished doing a study of crops out in south-western Queensland. He needed of course to go out there during

three springs to measure the growth of a particular crop. In the first year there was a drought, in the second year there was a bushfire and in the third year there was a flood. That cannot be put down to bad planning by the student or the supervisor.

Also, last year—18 months ago—the Heron Island marine research station burnt to the ground, a couple of months after a reconstruction had been completed. A very large number of experiments were destroyed in that fire. Just in case you think it only happens in the natural sciences, we had a student in ancient history who was seeking to make use of resources in the Vatican Library and the Vatican Library closed with about two weeks notice for major refurbishment when some structural faults were found, so the student's research project was put back by about 18 months while he waited for the Vatican Library to reopen. These things happen. They do not happen in the majority of cases, but it is important to remember they might happen and we need to have sufficiently flexible administrative and funding arrangements to allow for them. These are real-world research issues. These things happen in all kinds of research and therefore they happen for research students.

I think we also have to make provision for the fact that the largest group of research students are in the age group of 25 to 40. Those of you who are close enough to that age group to remember it well will know that that is about the time when most of the major things that happen in your life tend to happen, in that decade and a half: you get married, you get divorced, you have kids, you lose your job, you get a new job, you are given additional responsibilities, you change your place of residence, your parents start to get sick et cetera. Those are part of the experience of being a higher degree by research student.

One of the things in the data I have seen shows, I think quite conclusively, that the people who have the worst possible outcomes are the students who—and for this reason they are amongst our very best students—win a scholarship. The research may not quite go according to plan or one of those life events intercedes, and then the scholarship may run out and they go and get a job. They need to get a job because they probably already have a debt. My way of explaining what happens there is that the last three or four months take three or four years once a student gets a full-time job. Because they are usually highly skilled individuals they find themselves being given more and more responsibility, and that time away from the research, trying to struggle with a part-time PhD—I can tell you about that from bitter personal experience, if you really want me to bare myself—is disastrous.

All of the data that we have analysed shows that the people who are full-time throughout their candidature and finish while still full-time take a similar amount of elapsed time to that of the people who are part-time throughout their candidature. The people who take far longer than either of those two groups are the people who are in a mix of full-time and part-time. So we would argue pretty strongly for two things. One is to extend the scholarship duration for four years and remove one of the administrative requirements that were added to the Australian Postgraduate Award scheme sometime in the early nineties that prevents students from suspending their scholarship while still remaining enrolled. If students do that now, they lose scholarship entitlement. We would like to see a reversion to the old arrangements where, if a student decided to go part-time while working for a period of time, they could retain their scholarship entitlement—it would be banked, if you like—and when they wanted to go back full-time for the last, say, 12 months, when they were finishing experiments and writing up, they would be able to go back onto their scholarship up to the time limit of four years. That would

allow students to manage their lives and their finances a little more flexibly than the, I think, rather mean-spirited bit of administrative detail that we have in there at the moment. So it would give them the ability to take leave when appropriate without losing scholarship entitlement—four years in total of stipend—for an amount of approximately \$26,000. That is about a 30 per cent increase. A number of us have arrived at the same figure through different methods of analysis. That would seem to be about right.

The other important detail to make sure you find a place for in your recommendations, I submit, is that the stipend level be properly indexed. At the moment it is indexed in a rather obscure way by some formula in the Higher Education Support Act which is almost impossible to find, and the rate of indexing is not sufficient to cover the rate of inflation or the rate of actual costs that students might experience.

The second major point I want to make is that successful research higher degree programs take place in research-rich environments. You might think that is obvious, and it is obvious in most countries in the world, but it is not quite so obvious in Australia. All 40 degree-granting institutions in Australia can grant PhDs. In the United States there are only about 400 universities out of over 4,000 that grant PhDs. They ration the ability to grant PhDs to those universities that have research-rich environments and that are accredited to offer PhD programs in particular disciplines.

I am not sure that I would necessarily want to push it that far in Australia, but I think the principle that good research takes place in a research-rich environment does need to be emphasised. The policy principle in Australia has been an equity of access principle. The insistence that anybody should be able to do a PhD on any topic anywhere, which is to overstate the case slightly, has perhaps been the principle that we have followed. I think that has necessarily led to some unsatisfactory outcomes for a lot of students who have been attempting to do PhDs in places where there are not sufficient library resources or there is not sufficient expert supervision and so on.

The Carnegie Foundation in the US has published two reports, in 2006 and in 2008, that argue that sort of case very strongly—that positive PhD outcomes come from research-rich environments. I suppose what I mean by that is that you need to be working in a context in which your research actually feels like it matters. It is pretty awful to be an isolated student on the edge of a campus where nobody actually knows anything about your topic. A research-rich environment means that your research is supported not just financially but technically, professionally, intellectually, socially and so on. It is where there are enough equipment, libraries and expertise and there is a research culture. The implications for that are either that we cut the number of PhD students in Australia, which we would not want to do, or that we fully fund the costs of research and research training.

The final point I want to make is about the international dimensions of all of this. I suppose it is a bit of cliché to say that things have internationalised recently; we now live in a global era. But the research and higher education sector has been global for a thousand years. People have always travelled to go to universities. The University of Bologna, when it was founded, was a centre for students from all over Europe. There is a wonderful little university in Hanoi in Vietnam that shows people came from all over Indochina to study in that place. It was founded at about the same time as the University of Bologna.

Travelling to do research and study and disseminating those researches across national boundaries are part of the characteristics of a university. But it is indeed more intense than ever, and PhD students must fully participate in it. It is traditional in Australia for PhD students not to travel very far from home to university, and it is also relatively traditional these days for them not to go overseas to do their PhD. I understand there are many reasons why that is the case but I think we should make it possible for PhD students to go overseas during their PhD time for periods of research and to disseminate their work and so on.

The second pretty obvious thing about internationalisation is that the participation of international PhD students in our PhD programs is of massive benefit to the innovation system in Australia. I will give a single statistic: we have just on 750 international PhD students at the University of Queensland, and what I want to emphasise is that they come from 93 different countries.

That is the critical thing. It means that the international students are not living, working and researching in national ghettos. More importantly, they are not just interacting with Australians; they are interacting with students from 92 other countries around the world. That is an incredible benefit to the Australian PhD students and the Australian researchers because what comes with that is ready-made research links. By the time they finish their PhD, they already have some research links out into those 92 other countries, or at least some of them.

The final point I want to make—and we did make it in our submission—is that there has been massive change internationally in the way PhD programs are run, managed and funded. That has really happened in about the last decade. I need to keep reminding some of my colleagues who did their PhDs in Cambridge—sorry, that was a remark for Michael Johnson in case he was here this morning; Michael has a Cambridge degree—California, Cornell or Copenhagen 10 or 15 years ago that they would actually be surprised at the way the PhD programs have changed in those places. We cannot afford to lose the competitive edge that we have had. I do not think our government funding systems and reporting systems have kept up with the change that has been occurring on the ground. That was the final point I wanted to make.

**CHAIR**—Professor Critchley, did you have anything?

**Prof. Critchley**—No, I do not want to add anything at this stage.

**CHAIR**—I am going to go straight to the stipend because it comes up all the time. I am going to ask you about it first because in your submission you suggested research high-degree candidates should be regarded as professionals.

**Prof. Lawson**—Yes.

**CHAIR**—Our previous witness talked about developing a cohort of young researchers. Presumably he has the same ideas as well. I think that is probably a very good idea, but I am wondering whether \$26,000 a year is sufficient or equates to the idea of a professional salary. My view is that it should be doubled if you are going to talk about professionalism, status, value and all those other things that give someone an incentive to keep going. Can you comment on that.

**Prof. Lawson**—We work in universities; we are not used to asking for large sums of money.

**CHAIR**—But you are asking, though, for the market attitude towards expertise and professionalism to be introduced over the old views about academics and research students—that they are just students at university not being very productive and that therefore they can be treated differently. But if you are going to apply market standards and attitudes to research at university—and I think it is now becoming evident that that is what you need to do—I think you need a stipend that is competitive even with a first-year graduate salary. It seems to be a problem in terms of the decline in domestic students that they are going off and getting better paid jobs and careers. How do we make this a professional career at \$26,000 per annum? We do not, do we?

**Prof. Lawson**—I cannot argue against your proposition at all.

**CHAIR**—I did not expect you to argue against it.

**Prof. Lawson**—You have picked up on the logic that was in our submission—that the stipend at its current level or even at the proposed level is still way behind the starting salary for any kind of graduate.

**CHAIR**—What profession in the marketplace does it equate to? It would be someone making coffee in a coffee shop—not that there is anything wrong with that.

**Prof. Lawson**—It would almost bring you up to the wage of a cleaner.

**CHAIR**—Of a cleaner?

**Prof. Lawson**—Yes. The stipend is tax free and we would argue that, for a variety of reasons, it should stay tax free, but at \$40,000 it would actually be competing with, say, a first-year law graduate or a first-year engineering graduate who was not going off to work in the Queensland mines—

**CHAIR**—Or in Western Australia.

**Prof. Lawson**—or in the Western Australian mines, who is likely to be on a very considerably larger amount of money. Our engineering school has tried very hard to attract those top engineering graduates. It will fly them in from anywhere in Australia, it offers them a guaranteed scholarship months before the end of the year et cetera, but it just cannot get enough applicants.

**CHAIR**—I have one more question before I hand over to my colleagues. It is becoming apparent that we seem to be out of step with international attitudes and standards towards research postgrad students. Can you offer some suggestions as to why that is the case? We tend to think of Australia—I think in all fairness—as a country that is very much at the cutting edge of a lot of areas. Given our wealth and prosperity, we are certainly not short of resources to fund our own initiatives. Why are we lagging behind?

**Prof. Lawson**—I will answer one bit of the question and ask Christa to answer the second part. We are not lagging behind in the quality of the degrees. We have the most robust thesis

assessment system in the world; I can explain why that is true if you want me to. We are not lagging behind in a lot of our internal management procedures for students. We picked up the transferable skills agenda earlier than a number of other countries did. But we are certainly lagging behind in the extent to which we fund the students. The northern Europeans have got it all over us in the way they provide security of employment and income for people doing research higher degrees. I will ask Christa to talk a bit more about that.

**Prof. Critchley**—In most European countries other than the UK, doctoral students are not paid scholarships; they are paid salaries.

**CHAIR**—They are salaried? How does it compare to a salary they would be achieving if they were outside the university? Is it comparable?

**Prof. Critchley**—It is comparable to a salary in the junior ranks of a university. For example, in Germany, where I did my PhD, my salary was at a public servant level in a particular category that equated with the kinds of public servant skills that you would look for in people with a first or an honours equivalent degree. That was indexed, as all the other salaries were. It is still the case, even after 30-odd years. The university academic staff are still paid public servant type salaries, so they are all on a par with the German public service. They do not have their own salary structures, if you see what I mean.

**CHAIR**—I understand that.

**Prof. Critchley**—So they are all linked. What I would like to see in Australia is an explicit link with a postdoctoral kind of salary. We need to be as broad as we can possibly be across all the disciplines, because people now do PhDs in architecture as well as in law, biological science or zoology, for example. We need to be reasonably consistent, I think, with the kinds of salaries that we would offer if we were to go that far. We should probably pitch it at a level that is, say, two or three steps down from, or at a percentage level of, a postdoctoral level appointment like an ARC research associate. In, I think, 1990—and I think we have put a bit of detail about that in our submission—that exact suggestion was made.

**CHAIR**—In 1990?

**Prof. Lawson**—In 1992.

**Prof. Critchley**—The suggestion was that we should, from then on, pay scholarship rates that were, I think, 56 per cent of the then ARC research associate salary. That made some sense because, when we look at doing a doctoral degree as a career step rather than a step in a study program, we would find, I think, a much easier link that people can make to where their careers are headed if they start off with that particular entry salary, if you like. It would be conceptually easier, and I think it would also be motivational.

**CHAIR**—It would be attractive to stay on and do this and not feel that you are living the life of a pauper.

**Prof. Critchley**—Yes, doing a PhD and spending four or five years of your life, as they do now, in abject poverty.

**CHAIR**—Germany has a very high ratio of PhDs to their population.

**Prof. Critchley**—They do.

**CHAIR**—Do you think the reason for that is the funding structure they have for PhDs?

**Prof. Critchley**—Yes. The other reason for it is that the kinds of jobs that people with PhDs go to have always been much broader. People in all the different disciplines in German PhDs have always become anything from a CEO of a major multinational company to a professor in some discipline or—

**CHAIR**—Are there any PhDs teaching at schools?

**Prof. Critchley**—Yes.

**CHAIR**—Would you say that it is common practice?

**Prof. Critchley**—Half the teachers that I had at high school had PhDs in their various disciplines.

**CHAIR**—That is extraordinary.

**Prof. Lawson**—And a number of the presidents and chancellors of Germany over the last 50 years have had PhDs as well.

**Prof. Critchley**—Yes, including the current one. And the other interesting thing about that is that, while the German system has a number of faults and difficulties, it certainly encourages people to do PhDs. It encourages people very early in terms of secondary teaching. The people that went into secondary teaching did exactly the same work and exactly the same research work that I did to complete their undergraduate degree, but they then went into the teaching, pedagogy, training and I went into doing a PhD, so I went into doing the more professional-academic type training. But our undergraduate degrees were identical. So, even now, you would not find a secondary teacher in Germany that did not have a degree in the discipline that they teach. A science teacher would always have a degree in science first and then also have teacher training—pedagogy. That is the same with music, languages, whatever.

**CHAIR**—Yes, all the disciplines. I am assuming that the teachers in Germany get paid at a higher level than the teachers in Australia.

**Prof. Critchley**—Absolutely.

**CHAIR**—Is it a much higher level?

**Prof. Critchley**—I could take that on notice.

**CHAIR**—I am interested in this because I think this is critical. I come from a secondary school teaching background. We are trying to address issues at a university level that have their

roots well and truly in secondary schooling and primary schooling. I do not see how you can fix one end without looking at what you need to do at the other end.

**Prof. Critchley**—I could not agree more.

**CHAIR**—The German system interests me. In Greece, which is another system I am familiar with—it must be a European attitude—medical students do their general practice and then they all branch off into specialisation, so they all have a specialisation of some kind.

**Prof. Lawson**—We have become a bit obsessed with getting people through the PhD program super quickly. I think that is an area in which we have fallen behind in international terms. As I mentioned before, the British have become even more obsessed with this than we have. There is now some concern internationally with the quality of the British PhD, which was once absolutely outstanding. But we are just not giving them time to do all the research that is absolutely required to acquire all the skills that are needed—whereas I think the northern Europeans understand that it takes time to do it properly, and they are prepared to fund them and support them. We doubled the number of APAs at the last election but we did not do anything about the duration of them or the value of them. I would have to say that I would put both of those before doubling the number, and I have expressed that directly to the minister.

**CHAIR**—A number of others have made that observation.

**FRAN BAILEY**—Thank you very much indeed. You have provided us with some very thought-provoking ideas. We have enormous challenges in attracting students into higher levels of research then retaining them as future researchers but, in addition to that, we have a problem with our ageing academic population. I have three questions. Have you got any more examples of different degrees of flexibility in making it attractive for young people to research? I should not keep saying ‘young people’, because it has been pointed out that people of all ages are embarking on research. Could I ask, in particular, for your comments on opportunities for commercialisation of that research. Has the University of Queensland got a strategy in place for dealing with the ageing academic population?

**Prof. Critchley**—I will answer your question about the commercialisation of research and what we as an institution do to foster that. For quite a number of years we have been actively engaged in training all research higher degree candidates in intellectual property issues and research commercialisation, mostly through our commercialisation arm, UniQuest, but recently also through making use of the Commercialisation Training Scheme and setting up, if you like, the parallel qualification of the graduate certificate in research commercialisation, which research higher degree students will take in parallel to their PhDs. We are very pleased to see this year that we had nine graduates from the graduate certificate in research commercialisation.

At UQ especially, because of the involvement of UniQuest, they run two-day residential workshops for all PhD students that are very, very popular and very well attended. I think they have about 100, or close to 100, at a time. The levels of awareness are very high at UQ in all areas, not just in the typical scientific areas but also in other areas, like the social sciences and the humanities. So we place a lot of emphasis on that side and we make people aware of the importance of what to do to safeguard possible commercialisation opportunities. The other thing that UQ is heavily involved in is the cooperative research centre scheme. At last count we were

associated with 30 CRCs. Of course, the emphasis there is on collaboration with industry for the purpose of major commercialisation, if at all possible. We have a lot of PhD students involved.

**FRAN BAILEY**—Is this a major theme happening in overseas countries as well?

**Prof. Lawson**—It has probably happened to a greater extent in Australia than in many other countries. The University of Queensland's commercialisation arm now provides intellectual property commercialisation for three other Australian universities and we have had approaches in the last six months from universities from two other countries for UniQuest to provide the research commercialisation expertise for them. I have been in South America a few times over the last two years, and we are constantly being asked to give seminars there on how to commercialise research—how to involve research higher degree students in the commercialisation of research and so on.

**FRAN BAILEY**—Maybe they have to come here to learn.

**Prof. Critchley**—Now there's a good point.

**Prof. Lawson**—They have governments that are prepared to pay their PhD students to do just that. We have got increasing numbers of Chileans and Brazilians coming here and the particular attraction of Australia is the ability of Australian universities to work with industry and to commercialise the research.

**Prof. Critchley**—But we cannot allow the international students to participate in the Commercialisation Training Scheme, which is unfortunate.

**FRAN BAILEY**—What is preventing that?

**Prof. Critchley**—Legislation says it can only be made available to domestic and permanent residents and New Zealand citizens.

**CHAIR**—It has public funding and that is why we would be able to access—

**Prof. Lawson**—The question was about the ageing academic population, which is sitting in front of you! There are a number of factors in that. As I mentioned before, the average PhD student is aged either 30 to 34 or 39 to 40. That means they have had another career before they do a PhD. It may well mean that they then start their academic career in a university in their early 40s. So we have an academic population with very large numbers of people in their 40s and 50s whose total time at the university therefore might only be 20 to 25 years, rather than what we once would have expected: 35 years.

The second thing is that the University of Queensland now attracts a lot of people who have had the first part of their career at another university and who want to move—shall we tentatively say up—to the University of Queensland but, because we are a research intensive university, a lot of our staff are also moving on to even better universities. So it is a highly mobile academic workforce these days.

**FRAN BAILEY**—Is that happening or are you doing something as part of a strategy to attract that? That is what I am really getting at.

**Prof. Lawson**—Both. That is a phenomenon that is happening anyway. Certainly the number of older PhD students and the mobility of academics are increasing. If you are a relatively desirable institution you will attract people, but it will also mean you will have people moving on because having been successful here they will try to go elsewhere. One of the reasons we have attracted more staff is that we have been freer with research grants than many other universities and we have provided larger numbers of postdoctoral fellowships to bring people in.

The other thing that we have been a bit slow to take account of is the ageing population but just over the last couple of years we have improved the data massively and we now have a much stronger idea about what the chronological age profile is. What have been rather harder to manage are those people who make mid-to-late career decisions to move to other institutions, so we have had to be very careful to preserve that kind of intergenerational quality in academic departments. One of the worst things that can happen to an academic department is that it can be full of, for example, 44-year-olds who all got their PhDs about the same time in the same branch of chemistry or something like that. The essence of good academic environment is to have a constant spread of interest, ages, abilities and national backgrounds and all the rest of it. We have certainly looked at those kinds of things and we bear those in mind when we go out to attract and recruit.

**Mr SYMON**—My question relates to the APA eligibility. You have raised a question about the guidelines and insist that it applies only to applicants with first-class honours or equivalent. My understanding is that you could be one per cent outside of first-class honours and therefore be locked out of that system. Is that correct, that view from the outside?

**Prof. Lawson**—Yes, it is correct viewed from the outside and from the inside. That is absolutely the case. There was a very good report that the ARC did in the early 1990s and there was another report done in the early 1990s for DEST—or whatever it was called then—that showed that students who got a second-class honours division 1—2 A or 2(1)—often made the best PhD candidates. It is a bit of a mystery to us why that decision was made. While we are watching the Olympics you could actually be point one per cent outside the honours 1 cut-off and miss out.

**CHAIR**—That is because only one person can get a gold medal.

**Prof. Lawson**—That is right; it is nuts.

**Prof. Critchley**—It is all about picking winners—and you cannot do it.

**Mr SYMON**—It seems strange to me that we have an arbitrary cut-off when one of the problems we are looking at here is getting more people into the stream when some areas in particular cannot even attract candidates. We are setting the bar too high for, as you say, no particular reason other than someone said that this is what it should be. We should consider that from a committee point of view and ask why it should be so and whether it affects the quality of the outcome if, as you suggest, it goes down to 2A.

**Prof. Lawson**—It has never been shown to be a strong indicator of success in the PhD program.

**Prof. Critchley**—For our University of Queensland scholarships we have changed that rule. For two years now we have allowed honours 2A or equivalent applicants to apply for UQ scholarships.

**CHAIR**—Who sets the rule?

**Prof. Critchley**—We do.

**Mr SYMON**—I think they are talking about internal university scholarships not APAs

**CHAIR**—You have opted for a bit of flexibility but it is government that sets the bar.

**Prof. Critchley**—Yes, which is why we are obliged to provide APAs to only honours 1 graduates.

**CHAIR**—Because only government can change it.

**Prof. Critchley**—We decided that that was not appropriate and therefore we allowed honours 2A graduates to apply.

**Dr JENSEN**—But even H2A is somewhat arbitrary. What about a whole variety of other factors that maybe you should be considering as well?

**Prof. Critchley**—We do. We have just introduced that. In fact, I have just finished what we would call the selection criteria for entry into a PhD and application for a scholarship. There is now a proper set of selection criteria that are directly linked to our graduate attributes. The broad selection criteria are specified by performance indicators that we look at. They apply not only to the individual applicants but also to the enrolling unit. We require that people have an appropriate environment in which to work, because they are actually located in their schools. We make the rules for, if you like, the academic program and we set the curriculum for them in that sense, but they actually work in their academic departments with their academic colleagues. So we both check on and look at the credentials of not only the applicant but also the school and the supervisor.

**Prof. Lawson**—I think the point that Mike and Dennis have just made is that there are many other characteristics that are at least as important as the attainment of a certain grade point average in the fourth year of a degree, and we need to be able to measure those. If you struck out that one subclause from the APA guidelines I think you would immediately achieve better outcomes. If we get 140 scholarships to hand out, it is not in our interests to hand them out to duds. Why would we want to lower the bar? We do not want to lower the bar; we just want to give them to the people with the greatest amount of aptitude to succeed in the degree program. At the moment, we are hamstrung.

**Mr SYMON**—If we double the amount of APAs, you are pretty much going to run out of talent if it has that restriction on it.

**Prof. Critchley**—The other issue here which is really important is that more and more people come in with qualifications that are not your typical honours-level qualification, and that is so for domestic as well as international applicants. We have a lot of domestic applicants who have only recently become Australian citizens or Australian permanent residents and have qualifications that are different. Then there is a large group of people who are coming in after an already very successful professional life in education, law or social work. For them, that 1A qualification is not terribly relevant when you try to judge whether they are going to make a really good PhD student and do some really good research. So, if possible, we would like to have a lot more flexibility, for all those reasons, in the assessment of what we do and how we assess people for scholarships—and also for entry, because the two really have to go very closely together.

**Prof. Lawson**—We also introduced a number of scholarships that students can pick up in their second year. So students who may not have been eligible at the beginning but who have performed well in the first year of the actual PhD program can pick up a scholarship then. That is how we get around the current restrictions, as well.

**Mr RAMSEY**—I spoke to you before about a couple of these things. You highlighted the international scholarships—the Endeavour scholarships—in your submission and you said you would like to see some reform in those areas. One of the things that seem to keep coming up in our inquiry is that a lot of people are looking for general reforms and we are a bit short on specifics—like, ‘We want more flexibility but we do not really know what that flexibility is.’ I think in your notes that you have suggested a higher stipend and an extension of time, but are there any other things that are wrong with the system and for which we are not seeing the suggestions that we need so that we can make those positive recommendations?

**Prof. Lawson**—There are two kinds of scholarships for international students. For a year or so they were all called ‘Endeavour’ and that led to a lot of confusion. The name Endeavour has now been taken back off the IPRS program. The IPRS program pays a contribution towards the tuition fees of international students. There are a very limited number—330 nationwide. It used to pay the full cost of the tuition fees but now it is down to about 62 per cent. So I guess the point that I made in the submission was that we then have to find the rest of the tuition fee because we cannot, according to government regulation, pay that out of domestic sources of income. We also need to find a stipend for those students.

Now, if one decided to double the APAs it would seem to me quite a reasonable thing to make APAs available to those 330 students nationwide. They have been judged to be the top 300 international students. Giving them an Australian Postgraduate Award stipend would be a contribution and universities could use that for other research purposes.

The second part of the international scholarships program consists of a large number of bits-and-pieces scholarships that are lumped together under the label ‘Endeavour’. There are some country-specific scholarships—there is the Endeavour China award, there is the Endeavour India award, there was an Endeavour Vietnam award et cetera. Many of those only pay for a student to come to Australia for one year. Now when students get one of those scholarships they come to Australia with some considerable expectation and desire to complete a PhD in Australia but the scholarship suddenly cuts out after 12 months and we have to bid them a fond farewell or

scrabble around and try to find a bit of money to keep them here for another six months, another 12 months or something like that.

It is a source of some embarrassment to our colleagues in Australian Education International who have to announce these scholarships in front of politicians in foreign countries. When they are asked: 'How many Australia-Vietnam awards are there?' the reply is: 'Well, there is one, Minister.' When they are asked: 'How long do they last for?' the reply is: 'Well, one year, Minister.' At the same time the Vietnamese government is paying for 800 PhD students to come to Australia. So they are kind of stingy and secondly they are incredibly administratively onerous because a student can only apply for one of those scholarships after they have been offered a place in an Australian university. So we get hundreds of students who want to apply for one scholarship in Vietnam, one scholarship in Zimbabwe or one scholarship in Singapore applying to every university in Australia and getting full acceptance. The only reason they need to get the acceptance is to apply for that scholarship. So there are hundreds and hundreds of scholarship applications being assessed on the off-chance that one of those students will get a scholarship. There are others that are a mix of PhD scholarships and postdoctoral fellowships, and that causes some confusion both internationally and in the Australian university sector. There are other scholarships that are called Leadership Awards that pay at a higher rate but in many of those cases the intention of the program is not really academic but diplomatic. It is to cultivate sector leaders in various countries.

**Mr RAMSEY**—I can see why there is some confusion there. I look forward to re-reading the transcript. Thanks for that; I think that that does put some of the complexity into place.

**CHAIR**—It helps us understand it a bit better.

**Dr JENSEN**—As a physicist the issue of maths and science is something that I guess you could say is close to my heart. It was rather interesting that, when we had hearings in Sydney, the University of New South Wales and University of Sydney did not seem to have considered the potential of having a multiplier on maths and maybe some of the sciences to interest more secondary school students in maths and science. So to try to maximise their tertiary entrance ranking in year 12 meant that they dropped those subjects off. That is basically a scheme in order to maintain that number of students. UWA, on the other hand, is a university that is actively looking at this scheme.

**Prof. Lawson**—We introduced it.

**Dr JENSEN**—Sorry?

**Prof. Lawson**—We have already done it. We have bonus points for what in Queensland is called maths C and bonus points for a language other than English as well—because, in addition to the problem that you have correctly identified in maths and sciences, in Queensland in particular there has been withdrawal of people from foreign language programs. I think that only six per cent of graduating high school students has a foreign language at grade 12 level. If that was an animal, you would say that it was on the endangered list! We give two bonus points for people with maths C.

**Dr JENSEN**—Are you finding any flow-through as far as the take-up of those subjects in high school are concerned?

**Prof. Lawson**—It is very recent, so we cannot measure the effect on the university, but it has received massive support from science and language teachers who say that it has made a massive difference to the kids' attitudes to doing those subjects.

**Dr JENSEN**—If you could give some data on notice that would be fantastic.

**CHAIR**—Thank you very much. It has been a very enlightening discussion.

**Prof. Lawson**—Thank you.

**Prof. Critchley**—Thank you, and good luck with your deliberations.

**CHAIR**—I am sure you will get to read all about them.

**Prof. Critchley**—If you need any more information, feel free to get back to us.

**CHAIR**—Thank you. I would be interested in the selection criteria that you drew up; I think that would be good to have a look at.

**Prof. Lawson**—When are you expecting to bring down your report?

**CHAIR**—Towards the end of the year.

[2.29 pm]

**COKLEY, Dr John Damien, Member, National Tertiary Education Union, University of Queensland Branch**

**O'SULLIVAN, Dr Jane Nancy, Member, National Tertiary Education Union, University of Queensland Branch**

**WHITEN, Professor William John, Member, National Tertiary Education Union, University of Queensland Branch**

**CHAIR**—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We thank you for your submission and welcome you to make a brief opening statement before we proceed to questions.

**Dr O'Sullivan**—Thank you. I would like to make a statement on behalf of this group. Firstly, in relation to our affiliation and mandate: our presentation today is in support of the written submission that we have made to the review and this submission was put together from contributions made by various NTEU members at the University of Queensland, including teaching and research academics, research-only academics, postgraduate students and support staff from a wide range of disciplines. We feel that the strength of our submission comes from the strength of the consensus that emerged among this diverse group of stakeholders, and that consensus is of grave concern for a university system that is under a great deal of stress and which has survived thus far on goodwill and commitment as well as on the inertia resulting from the difficulty of career change for many researchers. But this situation is clearly not sustainable in terms of the quality and diversity of training opportunities currently offered, let alone the capacity to meet Australia's research and research training needs into the future.

Concerning the importance of this review, we feel that it is timely that a review is being conducted into research issues at universities and we are hopeful that well-informed changes in public policy can do a great deal to revitalise Australia's universities and secure its research capacity into the future. However, we are aware that this is one of several concurrent reviews with overlapping interests in this area; in particular, the innovation systems review and the review of Australian higher education, the Bradley review, overlap with the current review. We note that the Bradley review's terms of reference acknowledge the innovation review but not this internal review. We further note that the Bradley review specifically targets educational functions of universities and largely takes for granted the research and research training functions. So we wish to stress that it is impractical and undesirable to separate the teaching and research functions of universities. The synergy between teaching and research is a hallmark of universities and separates them from other tertiary education providers. We acknowledge that our submission has at times been broader than the terms of reference for this review. We regard this as necessary as the issues can only be fruitfully addressed by holistic and systemic analysis of the institutional arrangements.

Regarding the context and implications of underfunding, our submission was centred around the need for increased funding to the university sector. We have highlighted how erosion of the economic position and the pressure to do more with less has impacted on many aspects, including: workloads, morale, recruitment and retention of academics; the viability of career paths beyond the postdoctoral level; the pressure on postgraduate and undergraduate students to balance study with paid employment; the tension between research and teaching effort, turning the traditional synergy into a conflict; the downsizing and narrowing of expertise in departments and increased student-to-teacher ratios both eroding the ability to deliver high-quality teaching; the competitive marketing of education leading to softening of standards for both entry and progression; and 'program flexibility', preventing the staged development of depth in specialty areas. These points accentuate the connectedness between student teaching and research experiences, as mentioned above. We do not intend to elaborate on the detail given in our submission for each of these points, but we welcome any questions from the committee relating to these.

However, first we would like to make some additional comments relating to the context of funding stress. Our recommendation for a substantial increase in public funding of at least 30 per cent must be seen in the context of the various stresses that have built upon each other, representing death by a thousand cuts for university viability. We acknowledge that there has been some debate about whether the total funding to universities has increased or decreased over the last decade in real terms. This seems to depend on who is doing the accounting, and we do not claim to be experts in this area. However, the proportion of public funding has declined and the absolute level of public funding has apparently declined by about four per cent as a proportion of gross domestic product. Additionally, the total funding has not kept pace with enrolments, so funding per student has declined. This is at the same time as the OECD collectively has increased public funding to universities by 50 per cent. Such increases acknowledge the increasing importance of both higher education and advanced research capacity in increasingly knowledge based economies.

Furthermore, we maintain that over this period there has been a substantial increase in the scope and scale of output expected from universities. They have increasingly been asked to do more with less. This is largely a product of wider economic and cultural changes, but some of these have been abetted by government policy. These changes include the increasing professionalisation of work, with an increasing proportion of jobs requiring post-school qualifications, and the cultural shift in responsibility for post-school training from employers to the government via tertiary institutions.

An increased rate of population growth also burdens universities to expand the production of graduates ahead of the expanded community need for skills. A growing population inherently needs a higher rate of investment in training than a stable one. It would be fairer to rate training effort as a proportion of the economy a decade hence than against current GDP. Taking this into consideration, our current level of funding looks substantially worse in comparison with that of European countries with much lower growth.

The expansion of private funding contribution to universities, of which the Howard government was so proud, has not proportionally substituted for public funding, because it largely falls into two categories: firstly, fees, which place increased burden on students, forcing more of them to take on paid employment and thus compromising their capacity to study and

reducing the standard for all students; and, secondly, funds requiring universities to take on additional functions, thus not directly substituting for publicly funded activities. The expansion of foreign student intake has largely been in this category.

The various structural changes imposed on universities throughout the period of the Howard government have also had high transaction costs. We do not intend to argue the pros and cons of particular reviews and repositionings other than to point out that this process in itself has been an additional burden for which no additional funds were provided.

We have particularly argued the case for full-cost funding of research supported through publicly funded grant schemes. On this subject, we do not intend to quantify the extent to which research is underfunded by grants, but we recommend to the committee the discussion paper of the Australian Technology Network of Universities entitled *Quantifying and funding the full cost of research*. It is our purpose to point out the systemic implications of underfunding research grants. The funding shortfall must be seen in the context of eroded and increasingly tied core funding leaving a diminishing capacity to fill the gap. Since research is not inherently economically viable for universities, there is no incentive to support research careers.

Underfunding of research projects requires university units to juggle funding for various other activities in order to make up the shortfall. To do this, the unit must maximise the payback to other activities through credit for grants and publications going to the group leader rather than to the researcher and through the frequent use of grant funded research staff for teaching and postgraduate supervision. Cost minimisation by keeping research salaries down through underclassification of the work done and excessive unpaid overtime are characteristic of grant funded research positions. The capacity for research staff to build an independent research profile is undermined by the pressure for the institution to understate their contribution in order to build up the output statistics for continuing academic staff.

Finally, on the need for a paradigm shift: so far, we have talked on the issue of funding levels and its implications. We wish to take a step back from funding to look at the ideological paradigm that has justified the current funding arrangements. We argue that this paradigm is inappropriate and that only a change in paradigm will allow universities to fulfil their full social function in a sustainable, equitable and flexible way. The current paradigm regards universities primarily as economic entities. Their various activities can be valued and subjected to competition for limited resources. Efficiencies can be gained by reducing the unit costs of delivery. This paradigm places too much emphasis on students or prospective students as clients, defining what is valued. Universities thus become education supermarkets and naturally focus on the products with the greatest profit margins: courses that are relatively cheap to deliver while having high student demand.

The courses for which there are greatest skills shortages are not necessarily favoured, not only because universities lack incentives to expand them but because students lack incentives to demand them. The system assumes students are well informed about career implications of their course choices, yet it gives little incentive to provide this information objectively. The paradigm also focuses public funding on standardised metrics of productivity. Because such metrics can never reflect the diversity of effort or true quality of work required to produce a measured unit, there is pressure to shift focus onto those activities that most easily generate metrics. This shift may be demonstrably away from activities with greater long-term strategic public interest, yet

this is invisible under the economic paradigm. The paradigm neglects the vital role universities should play in promoting and progressing public debate. This is referred to in the Bradley review discussion paper as the third-stream activities contributing to economic, social and cultural capital. Non-academic communications by academics are not typically rewarded and, with escalating workloads, it is easier for most academics to avoid having any public profile.

There have been attempts to address public interest by providing specific funding or incentives to promote needed skills areas but, as add-ons to the economic paradigm, they are pulling against the tide and their impact is unlikely to be sustainable. We suggest that universities should be seen primarily as having a social function in providing training for future skills needs, research in technology development and leading public dialogue on issues of social importance. The value of these functions to society as a whole cannot be represented through their value to individual clients.

What would the implications of such a paradigm be? It would see greater collaboration between universities, industry and government in planning program offerings and adjusting incentives to ensure students fill the required places. It would measure public investment in training and research against projected future needs. It would fully fund state sponsored research and provide greater continuity in research programs to allow universities to support research activity and reward research success systemically rather than tactically. It would appreciate the need for limited and balanced workloads to allow research and teaching to regain their synergy. It would value institutional stability as a platform for program flexibility and innovation rather than demanding institutional restructure in the name of flexibility. It would end the unsustainable pursuit of ever-increasing economic efficiency, which has done so much damage to the university system over the past dozen years.

We would like to thank the committee for the opportunity to participate in this review. We welcome questions.

**CHAIR**—Thank you very much. Before we go to questions, I should mention that we must finish at three o'clock, because we have to catch a plane to Townsville. I am sorry, it is just the way life is. Does anyone have questions?

**FRAN BAILEY**—I have a quick one. I think that Dr O'Sullivan has encapsulated all the main funding areas. Given that we have an increasing number of female undergraduates, I am interested in your ideas of encouraging more females to pursue PhD studies and then some of the issues of retaining women who have achieved that level of research to remain within the system.

**Dr O'Sullivan**—We mentioned this in the submission. Certainly in my opinion the issue is not in attracting the students into a post-graduate program; it is in providing a viable career beyond the post-graduate qualification. Of course, that has knock-on effects in that students can see that taking on a PhD is not a particularly attractive route if there are not good career prospects afterwards. I guess it is not immediately apparent to a lot of graduate females what the nature of the glass ceiling is when you get into a career in research. I can only reiterate what we put into the submission—that those barriers can be quite subtle and not specifically gender related except in that success in an academic career currently, under the workload stresses that exist, conflicts a great deal with other life activities and many women are not willing to take that on.

**FRAN BAILEY**—I think we are aware of that, and I have read your submission. I guess what I was wanting to tease out is some ideas of more flexibility to put into the system. We are charged with the responsibility as a committee of the parliament to make recommendations. We are really interested not just in having the problems reiterated to us but in some suggestions.

**Prof. Whiten**—There are problems with maternity leave and the like. For employment in research positions funding for long leave of that type is not available. So the grant is put in for so much time to do so much work. If the lady or her husband is looking after a child, a long period of leave drops into this. There is an entitlement to pay at least a certain amount. The University of Queensland is quite good, but there is a problem in where this money comes from.

**Dr O'Sullivan**—The maternity leave issue has changed, certainly at the University of Queensland and I think at most of the universities. The last enterprise bargaining round allowed for core funding of maternity leave. Prior to that, as I experienced as a mother, there was an entitlement to maternity leave that was not funded, which meant that if you had a three- or four-year project you were entitled to be not there for 12 weeks as long as all the deadlines were met.

If you are managing an international project over four countries with field research that has to happen this year and you have a program happening that you have to employ extra casual labour to keep going while you are away, which was my experience, it just does not stack up. Having the very fixed term nature of research funding, where on the day that the grant period finishes you do not have any support at all to deal with the backlog of writing up and anything that has not been achieved up to now, creates a very rigid framework.

**FRAN BAILEY**—I do not want to go on because we have such limited time. I guess what I was really getting at and what you are saying is that there is a need to look at greater flexibility within the system.

**Prof. Whiten**—The University of Queensland has taken a percentage off research grants to cover that funding. But the research grants are not providing this percentage in the money coming in, which is being squeezed out of the system.

**Dr O'Sullivan**—That is just another aspect of the general underfunding of research through the grant schemes.

**Mr SYMON**—I am about to go off on a tangent. Yours is a very wide-ranging submission that covers many fields, and the one I have picked out is the lack of an Australian academic publisher. As you mention, for specifically Australian topics there is very little opportunity for international commercial publication, which of course then flows back into funding. I take it from your submission that you are advocating non-commercial publication in Australia of such documents, which would then attract the funding as if they were published internationally. Is that how I should read it?

**Prof. Whiten**—Close.

**Dr O'Sullivan**—We are advocating recognition of such work that may be published by the university itself for credit in terms of DEST funding.

**Dr Cokley**—It is the recognition that counts.

**Dr JENSEN**—Are you talking about internal peer review?

**Dr Cokley**—No, external peer review. Recognition in Australia tends to flow to the Northern Hemisphere. Many of our professors come from the Northern Hemisphere and say, 'It can only be any good if it's published in the USA, Germany or the UK.'

**CHAIR**—Publications in Australia do not count as much, do they?

**Dr Cokley**—They are devalued, in fact.

**CHAIR**—So it has to be international.

**Dr Cokley**—I publish in journalism and the place to publish research about Australian journalism is in Australia because that would benefit Australian journalism. It is less likely, almost impossible, to interest the Americans in publishing research about Australian journalism because not only do they have a superabundant supply of possible articles but they could not care less about what happens in Australia.

**FRAN BAILEY**—Does that apply across the board or just in certain areas?

**Dr Cokley**—Certainly in the humanities and the social sciences.

**Dr O'Sullivan**—Certainly in history, social sciences, English and literature.

**CHAIR**—In political science you have to have an international publication too.

**Dr O'Sullivan**—You can get funding for Shakespearean studies more easily than for Australian studies because you cannot get the DEST funding to do Australian studies.

**Mr SYMON**—And you are right—if we are not studying it in Australia no-one else is going to be.

**Dr Cokley**—They would not care. To answer your question, in the ERA initiative that is happening it looks positive and it looks good that some of our Australian journals and publishers are finally being more recognised. If the ERA initiative is solidified into regulation, that would be a positive outcome—much more so than the RQF.

**Mr SYMON**—Thank you.

**Dr JENSEN**—Your submission is probably the first one that I have seen that actually goes into ARC and NHMRC funding. This has been something that I have been concerned about, because in my view the goal of getting these sorts of grants is to pursue excellence in those sorts of areas. But the problem is you get inherently conservative research applications written up in order to get those grants and to get the track record. To what extent do you think the way ARC and NHMRC funding is granted inhibits research effort at universities? In particular, what sort of message is it sending out about a career in research to young researchers?

**Dr Cokley**—This is a topic dear to my heart right at the moment. For the last 2½ years I have been working on getting an ARC Discovery grant in and appraised. The mechanism—the bureaucracy—is enormous and debilitating. If there were some way that that could be lessened somehow, that would be a major achievement. It is an enormous ask, and at my level it normally requires a drive and a vision that is probably worth more than the \$500,000 that I am asking for. If you were to apply that drive and vision in property development or mining, then you would be looking for a return of several million.

**Dr JENSEN**—What about in terms of research effort and where it is applied in that, given the nature of the funding, it will be inherently conservative research and therefore you are not going to be really pushing boundaries; you are going to be looking at research that is making incremental increases in the knowledge. What is that doing to the overall research effort and the esteem with which Australian research is held?

**Prof. Whiten**—There are two problems here: one is that the ARC is funding 20 to 25 per cent of the applications, so it is very hard to get into them, and you need a very significant track record to get in, as well as a good proposal. So if you do not have a track record of strong publications, the best proposal just does not go anywhere.

**Dr Cokley**—I will let you know about the innovation in about three months because mine is about studying future media possibilities for space communities—we will see if they are innovative enough to fund it.

**Dr O’Sullivan**—I know that you were looking for specific recommendations that have a clear impact, but I want to stress again the systemic nature of the impacts. We have concluded that, because the grants do not cover the full costs of research, the universities are unable to support researchers. Researchers are just an appendix to a grant for the period of the grant and at the end of that period they are not university employees—they are not our business. That means that the innovation drive is left to the research and teaching academics whose attention is split between a wide range of responsibilities. The researchers who may have quite a substantial track record in a particular research area are not permitted to have their track record as proponents of this research. It has to be a tenured academic person who is submitting for the grant. If the research were fully funded, the universities would see this as an area in which they can build programs.

**Dr Cokley**—Build capital.

**Dr O’Sullivan**—Not only capital but also human capital.

**Dr Cokley**—That is what I meant—the social capital, the research capital.

**Dr O’Sullivan**—It means that they would be able to provide resources for researchers to prepare grant proposals, which does not exist at the moment, and they would probably be able to provide resources to support more innovative research preliminary to a grant proposal. Currently that sort of thing is mainly done in centres of excellence which have a larger body of core funding that they can petition for more innovative things. But within standard university teaching and research departments there is no leftover flexibility for anything discretionary. All of the funding is tied and even the tied funding is insufficient, so everything is under stress.

We are saying that if research is fully funded then universities will develop those areas of research that are most productive and valuable. With the right incentives, in collaboration with government and industry they can develop in the direction of future training and research needs. Without full funding of research, when it is just a requirement of core funding that they undertake it in order to produce productivity metrics, there is not really the incentive to develop research in that way and to develop the human capital in research.

**Prof. Whiten**—The system has become very much under more pressure over the years. This is a major complaint within the system. At the same time salaries have relatively dropped. I started as a junior in the mid-1960s at the same level as a backbencher. I am still at the same level as a backbencher approximately.

**Dr Cokley**—And I am substantially below him.

**CHAIR**—I think it is pretty clear that it is not just about immediate solutions; it is a broader job. There is an attitude and there is a systemic problem. I think we are pretty clear on that. That is what makes it such a big issue.

**Dr O'Sullivan**—I am trying to say that the government need not feel that it needs to micromanage this process. It can be an organic process towards the right outcomes but it has to be given the right environment to do that.

**CHAIR**—I think you have summed it up very well. It is an organic process. It requires a beginning and a gradual development to another end. You are at one end and yet we have to go back to the beginning.

**Dr O'Sullivan**—But I am seeing pressures in the opposite direction—for instance, transferable student credits or something that they can use to market themselves to different university education supermarkets and things, which is going from the wrong paradigm.

**CHAIR**—I understand that. I am sorry that we do not have any more time. Thank you very much. It was very interesting.

Resolved (on motion by **Mr Symon**, seconded by **Mr Ramsey**):

That this committee authorises publication of the transcript of the evidence given before it at public hearing this day.

**Committee adjourned at 3.03 pm**