

Research

October 2010

Key proposals

- The adoption by the Government of a Higher Education Research Policy which focuses on selectivity and concentration of the higher education research with the aim of creating research universities of international research excellence.
- The introduction of a coherent research funding structure which seeks to selectively fund research of the highest quality as well as concentrate research funding to build world-class research universities which have the capacity to compete at the highest international level.
- The continuation of a binary model of research funding with universities provided with research block grants awarded on the basis of a quality assessment, and competitive research grants provided by the research funding councils accompanied by block grants covering the indirect costs of those grants.
- The establishment of a research block grant program of sufficient magnitude to cover the costs of academic staff salaries associated with research, the cost of research training, general research infrastructure and to provide universities with the ability to strategically fund new research initiatives.
- The continued development of ERA so that the outcomes can be used to drive future research funding to drive selectivity and concentration of Australia's higher education research system.
- The research block grants to be allocated by ERA outcomes.
- The full funding of the indirect costs of research funded by the research councils using a unique indirect rate for each university.
- The development of a 'hubs and spokes' model as a way of managing the needs of universities which are unable to develop research excellence in a particular field.
- The strengthening of the Government's engagement in international research collaboration through the establishment and funding of a successor program to the International Science Linkages program and related measures.

Issues and challenges

In recent years there has been an overall lack of a clear and cohesive research funding policy for higher education which poses real risks in Australia's ability to sustain research excellence and is likely to lead to a decline in Australia's research performance at the international level. This could well lead to a decline in the reputation of Australian universities and a consequential decline in Australia's ability to attract the best researchers and research students and be detrimental to Australia's economic competitiveness.

This lack of policy direction has led to the implementation of policies and programs which have the effect of spreading the limited resources available to higher education research funding thinly across the higher education system rather than on following the principles of selectivity and concentration that are the key to building an internationally competitive research system.

Selectivity and concentration

Selectivity (supporting the best wherever they are found) and concentration (targeted funding to strengthen capability at internationally competitive standards) were expressed in 1988 by the Australian Government as the

dual principles to guide the funding of higher education research in Australia, however, the recent course of policy development has been driven by selectivity alone.

Around the world, there is a growing concentration of investment in world-class universities and centres of research excellence.

The German Government, for example, launched the German Excellence Initiative in 2005 with the goal of strengthening cutting-edge research in Germany and improving its international competitiveness. It does so through competitively funding Graduate Schools to promote young scientists and researchers, Clusters of Excellence to promote cutting edge research and Institutional Strategies on projects to promote top-level research. The competitive processes are run by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) and the German Council of Science and Humanities. A total of 1.9 billion Euros was made available to fund the initiative. The DFG publication Excellence Initiative at a Glance states:

“These were ambitious goals indeed, especially since it meant a departure from a long-cherished – and fatally wrong—conception that all universities are equal and hence should be treated equally. Instead, the Excellence Initiative pursued a path of inequality and of funding elites.”

“For the Excellence Initiative is not only changing the German science and research system – it is actually driving the country as a whole forward. It is creating thousands of high-quality jobs, it is promoting our specialists, experts and executives of tomorrow, and it is contributing to innovation in business and industry. And it shows how science supports society. And it is for all these reasons that the Excellence Initiative must be continued – and driven forward. Science aims to set the course for this development as soon as possible, working together with politics.”

A description of some of the positive attributed of the Program and concerns about the non-continuation of funding for the Program can be found in the article Germany Pursues Excellence Over Egalitarianism in the 27 June 2010 edition of The Chronicle of Higher Education (**Attachment A**).

In 1986, the British Government initiated a series of systematic appraisals of the quality of research performed in UK universities. Through the Research Assessment Exercise, they have used ‘selectivity’ incrementally to achieve ‘concentration’. There are fewer universities doing marginal research, the quality of research performance has improved, and the scale of the best has been intensified. Nevertheless, the British Government now sees the need for even greater concentration:

“We must use scarce resources well. In future this should mean more research concentration not less, especially in the high cost scientific disciplines. In a diverse higher education system, not every institution should feel that maximising its success in research assessment exercises or recruiting doctoral students is central to its mission. There are pockets of research excellence across a very wide number of institutions, but a more sustainable model for the future may involve new forms of collaboration between universities so that the best researchers can cooperate rather than compete against each other for scarce funds. This could also provide a stronger environment for research students.”

World class research universities

The higher education research system is a critical contributor to economic development and plays an important role in innovation and creation of new knowledge. Given the rising skills and innovation demands of the knowledge economy, the performance of universities is becoming even more important for future economic development. An internationally competitive higher education research system is important in enabling the establishment of international research networks and in allowing Australia to participate as a key player at the ‘cutting-edge’ of science and research ie in knowledge formation and transfer at the most elite level.

World-class research universities attract the best researchers and academic staff and contribute to the development of intellectual and social capital far more than is the case for lower ranked universities. They attract the best and brightest students resulting in the production of the most highly skilled graduates. and firms who want to access the ‘cutting-edge’ research and technology as well as the talent attracted to the universities. This creates a self-reinforced cycle of growth. They also attract the cream of international students which in turn increases educational exports and also can be a potential source of skilled migrants and the expansion of international research as well as social and economic networks.

At a global level, the “threat” from China, India and emerging Asian economies cannot be underestimated, especially as they are changing gear from being low-skilled and low-wage economies to ones that are investing in education and research to high-skill and high-technology exporters.

The economic success of knowledge-based nations is increasingly dependent on the ability of world-class higher education institutions to produce new scientific knowledge that can be efficiently channelled through a well-functioning innovation system to meet the needs of commerce, industry, governments and the broader society.

Australian universities lack international competitiveness, both in the capacity of research infrastructure and the critical mass of expertise. Lack of sufficient concentration puts Australia increasingly behind our competitors.

As measured by Shanghai Jiao Tong University 2010 rankings, Australia has 17 of the world’s top 500 research universities. Australia does not, however, have a university in the elite level of the top 50 research universities. The Australian National University is currently ranked 59th (having slipped from 50th in 2003) with the University of Melbourne and the University of Sydney are ranked 62 and 92 respectively.

Research funding models

Countries around the world use a variety of arrangements to fund research at universities. Generally research universities have four major sources of income: government funding for operational expenditures and research, contract research and consultancies from public and private firms, tuition fees, and the financial returns generated by endowments and gifts. The mix of funding sources vary considerable between (and within) countries. Some of the research funding models include:

- ‘Dual funding’ systems where academic salaries, infrastructure and general support is provided through block grants with direct project costs provided through research funding agencies often by a peer-review system.
- Funding arrangements where the research is ‘fully funded’ primarily through competitive research grants and contracts.
- Funding arrangements under which general support for research is obtained through cross-subsidies from funding for education and/or student fees or from endowment income.

Research at universities in the UK is supported by the Government through a ‘dual funding’ system. In England research infrastructure and salary funding is provided by the Higher Education Funding Council for England (HEFCE) and competitive research funding is provided through a number of discipline-based research councils. (Similar ‘dual funding’ systems are run by the bodies responsible for funding higher education in the other parts of the UK.) HEFCE provides funding to support the research infrastructure, including the salaries of permanent academic staff, premises, libraries and central computing costs. These funds are spent at institutions’ discretion. The seven Research Councils provide funding for specific projects. Research funding is also provided by a range of sponsors including charities, the NHS, industry and commerce and the European Union. The scale of this funding varies according to subject area. It is very significant in areas such as medical research. The funding provided by the Research Councils includes up to 80% of the indirect costs associated with the projects they fund.

The UK funding arrangements have the advantage of providing institutions with a block grant funded by a systematic appraisal of the quality of the research undertaken by institutions. This has resulted in fewer universities doing marginal research, an improvement in the quality of research performance and greater concentration of research.

The provision of a substantial block grant enables universities to strategically manage their research and covers the cost of research training as well as academic staff engaged in research while providing funding to support university backed research initiatives. The greater discretion provided by the UK system provides universities with greater capacity to plan their research in accordance with their missions coupled with a greater certainty of funding provided by a funding system based on regular five-yearly reviews rather than performance measures which fluctuate annually.

In addition, the requirement for Research Councils to cover the indirect costs of the research funded by their grants and the additional funding provided to cover the indirect costs associated with research funded by philanthropic foundations and for the commercialisation of research reduces cross-subsidisation of research from funding for teaching and other purposes.

In Canada, the universities receive general funding from the provincial governments with research funding being provided by the Federal Government through targeted research programs and through research councils such as the National Science and Engineering Council.

Public research universities in the US are funded from a wide variety of sources. In general most funding for research comes from the Federal Government, including the National Institutes of Health, the National Science Foundation and the Department of Defence and from industry. Funding from US funding agencies usually include indirect costs as well as the cost of academic staff salaries.

Denmark also has a 'dual funding' system for funding university research including 'basic grants' provided for general research purposes and competitive research funding provided by the research councils, the European Union and private foundations. Germany has chosen to focus much of its publically funded research at research institutes rather than at universities including the Max Planck and Fraunhofer Institutes. There are around 750 state financed research institutions in Germany, plus research and development centres run by industrial corporations.

New Zealand universities must compete for research funding with other research performers and the research funding is undertaken on a contractual basis with indirect costs paid by the funding agency.

Australia has a version of the 'dual funding' system with general research funding provided through DIISR Research Block Grants and competitive research funding provided through the ARC and NHMRC and other competitive funding agencies. The low level of block grant funding means that there is considerable cross-subsidy from the Commonwealth Grants Scheme and student fee and HECS income to cover general research costs including salaries of academic staff involved in research.

The major competitive grant funding agencies, the ARC and NHMRC, fund part of the direct costs of research projects based on peer review. The remaining direct costs and some of the indirect costs are then funded through research block grants. The major research block grants include:

- Research Infrastructure Block Grants
- Sustainable Research Initiative
- Joint Research Engagement
- Research Training Scheme
- Australian Postgraduate Awards

Australian funding developments

The 2009-10 Budget responded to the Bradley and Cutler reviews with new policy directions and considerable commitments of new funding. Notable measures include: doubling the amount of funding for the indirect costs of research; improving the rate of indexation for research block grants and scholarships; widening the eligibility of scholarships to international students; and undertaking an assessment of the quality of research. Universities also benefitted from an unprecedented capital injection as part of the Economic Stimulus measures.

Through submissions and other responses (formal and informal), the Go8 has expressed concerns about a number of aspects of specific program initiatives, including: ERA; SRE; JRE; and the consultation papers on the performance funding indicator framework, and measuring the SES of higher education students. The concerns raised in this paper go beyond the details of specific programs to the wider policy framework design and the method of its formation. All in all, the direction of government policy in Australia is doubled-edged for research universities. On the one hand, university education and research have received renewed attention and additional funding, and important structural changes are being made to the architecture for funding university research. On the other hand, there are stronger tendencies to instrumentalism, standardisation and government intervention, and increases in funding are being distributed predominantly on a level basis. This approach will not underpin the international competitiveness of Australia's leading universities. Slippage of Australia's best against the world's best in the intellectual talent stakes, to the extent that it severs rather than helps to strengthen international ties, would be disastrous for Australia over the decades ahead.

Objectives

The Go8 considers that it is time for a major overhaul of Australia's higher education research arrangements.

Selectivity and concentration in higher education research

The focus of the Government's policy needs to be on selectivity and concentration of the higher education research effort with the aim of creating research universities of international research excellence. Australia needs a coherent research funding structure which seeks to selectively fund research of the highest quality as well as concentrate research funding to build world-class research universities which have the capacity to compete at the highest international level.

Full funding of the indirect costs of research

The Government needs to continue to move towards the full funding of the indirect costs of research funded by the research councils using a unique indirect rate for each university. Such an approach allows for greater differentiation of research missions within the sector and would be consistent with international approaches. This is the only option that can appropriately reflect the costs associated with diversity of missions, disciplines, scale and geographic location. In addition it is the only approach which would enable universities to be appropriately encouraged to undertake research of the highest international standards as well as research which by its nature is high cost. While additional funding has been provided by the Government through the Sustainable Research Excellence (SRE) program (set to rise to \$300 m pa), this funding is insufficient to cover the full indirect costs of research funded by schemes on the Australian Competitive Research Grants Register (ACGR) and additional funding will need to be provided.

Excellence Research Australia

The Go8 universities have always strongly supported any measure of research excellence that would highlight Australia's research strengths and benchmark these against the best internationally. The Go8 continues to support the development of Excellence Research Australia (ERA) and its link to the funding of research. In its current form ERA has not been designed specifically to feed into the formula funding of research block grants. The Go8 considers however that it is essential that the bulk of the research block grant funding needs to be driven by ERA. While the present ERA outcomes will need to be used initially for this purpose, the Go8 urges the Government to refine the ERA process so that the outcomes can be used to drive future research funding to drive selectivity and concentration of Australia's higher education research system. This may require a rethink of the basis for the ERA assessment away from a discipline based assessment to the structural based assessment used for the UK RAE.

Another round of ERA would need to follow quickly and certainly within two years to allow for adjustments in methodology and an ERA assessment should then occur at regular intervals of 3-5 years. The decision of the ARC to change the ERA rating scale with world-average performance (previously rated as two) now rated as three has resulted in less discrimination of research of the highest quality. The Government needs to modify the ERA rating scale to provide such discrimination. This could be achieved by introducing a 5* rating.

Research block grants to be allocated by ERA outcomes

The ERA outcomes could be used to allocate the research block grant by developing an index similar to that used for the allocation of research funding by the Higher Education Funding Council for England (HEFCE) based on the outcomes of the UK Research Assessment Exercise (RAE). The Index could be, for example, weighted performance x FTE (Teaching & Research and Research only academic staff Level C and above). Weighted performance needs to be similar to that used by HEFCE for its Quality-related research funding (9 for a ranking of 4, 3 for a ranking of 3, 1 for a ranking of 2 and 0 for a ranking of 1 or 0) to ensure that funding is maximized for work of the highest quality and to reduce the performance of research of marginal quality.

Development of a 'hubs and spokes' model

The Go8 supports the development of a 'hubs and spokes' model as a way of managing the needs of universities which are unable to develop research excellence in a particular field. Researchers and research teams should be encouraged to organise themselves into hubs and spokes, with resources concentrated in the most appropriate research centres and departments (the hubs), where they can be accessed by scholars around the country (the spokes). Researchers engaged in high quality research who are located in an institution which has no critical mass in that research fields would benefit greatly from collaboration with institutions which did have a critical mass in their area of research. The benefits could include active participation as a full member of the community of scholars at the research hub, access to equipment and facilities (including library, databases and on-line resources) at the research hub, joint supervision arrangements for research students and access to development programs at the research hub. The researchers in the 'spokes' would also benefit as it would assist in raising the 'critical mass' and research output of the hub.

International research collaboration

At the national level, the chief impediments to international research collaboration are a lack of strategic focus in Australia's international research collaboration, a lack of coordination of Australia's bilateral research approaches and a lack of funding. The Go8 considers that there remains a need for the strategic funding of international research collaboration especially in relation to:

- Major research facilities
- Major international research projects
- The strategic funding of collaboration with countries which are rapidly developing their research capability (for example India and China), and
- The strategic funding of collaboration with countries for other reasons, for example, for aid purposes or collaboration in research areas of strategic importance to Australia

In the past, the International Science Linkages Program (ISL) administered by DIISR has served this role. However, the program has suffered from underfunding and a lack of a cohesive Government approach to international research collaboration.

The Government must put in place a coherent international research collaboration strategy if Australia is to maintain its research competitiveness and prosper economically. Such a strategy requires that the Government actively explore government-to-government agreements relating to participation in major international research facilities, develop a national strategic assessment capacity for future international research collaboration, and assess the appropriateness, against international benchmarks, of mechanisms in place to enable Australian researchers to actively participate in global knowledge networks.

Such a strategy would pick-up many of the recommendations of the House of Representative's Standing Committee on Industry, Science and Innovation Inquiry into Australia's International Research Collaboration. The Go8's response to the Inquiry's recommendations are at **Attachment A**.

Solutions

Binary model of research funding

The Go8 supports the continuation of a binary model of research funding with universities provided with research block grants awarded on the basis of a quality assessment, and competitive research grants provided by the research funding councils accompanied by block grants covering the indirect costs of those grants.

The establishment of a research block grant program

The Go8 supports the establishment of a research block grant which is of sufficient magnitude to cover the costs of academic staff salaries associated with research, the cost of research training and provide universities with the ability to strategically fund new research initiatives.

- The block grant would initially subsume the current research block grants (\$1.148 billion in 2010) including Joint Research Engagement (JRE), Research Infrastructure Block Grants (RIBG) and Research Training Scheme (RTS) but additional funding would be required in the long term to maintain the international competitiveness of Australia's universities, to fully fund the cost of research training and to cover the costs of academic staff time spent on research.

The continued development of ERA so that the outcomes can be used to drive future research funding to drive selectivity and concentration of Australia's higher education research system.

The Go8 continues to support the development of ERA and its use for the funding of research.

- Funding will need to be provided to the ARC to cover the costs of managing the ERA process.

The full funding of the indirect costs of research funded by the research councils using a unique indirect rate for each university.

The Go8 supports the move towards the full funding of the indirect costs of research funded by the research councils using a unique indirect rate for each university.

- Funding would initially come from the Sustainable Research Excellence (SRE) program (set to rise to \$300 m pa) but additional funding will need to be provided based on the SRE costing exercise currently being undertaken to ensure that the full indirect costs of research funded by schemes on the Australian Competitive Research Grants Register (ACGR) are met.

The development of a 'hubs and spokes' model as a way of managing the needs of universities which are unable to develop research excellence in a particular field.

The Go8 supports the development of a 'hubs and spokes' model as a way of managing the needs of universities which are unable to develop research excellence in a particular field.

- Additional funding of \$100 million pa will need to be provided to facilitate hubs and spokes collaboration.

The strengthening of the Government's engagement in international research collaboration through the establishment and funding of a successor program to the International Science Linkages program and related measures.

The Go8 recommends that the Government put in place a coherent international research collaboration strategy including the establishment and funding of a successor program to the International Science Linkages (ISL) program, establish a scheme to support travel expenses of early career researchers, increased funding for the Australia-China Science and Technology Program and expand Australia's network of Science and Technology Counsellors.

- Funding will need to be provided to establish the successor to the International Science Linkages program and associated initiatives. The ISL Program was funded at about \$11.7 m in 2008-09. The successor program will need considerable more funding perhaps \$30 m pa.

Attachments

Attachment A: The Chronicle of Higher Education article on Germany Pursues Excellence over Egalitarianism

Attachment B: Go8 response to the Report of House of Representative's Standing Committee on Industry, Science and Innovation Inquiry into Australia's International Research Collaboration

Attachment A

The Chronicle of Higher Education article on Germany Pursues Excellence over Egalitarianism

June 27, 2010

Germany Pursues Excellence Over Egalitarianism

By Aisha Labi

Konstanz, Germany

Fredrick Robin has the kind of intellectual curiosity and wide-ranging interests that many universities seek. When the native of India decided to pursue a doctorate in chemical biology, he discovered that a professor here at the University of Konstanz was looking for someone with a knowledge of biology, computer programming, and applied chemistry, all of which Mr. Robin could offer.

But the fact that a top Indian student ended up at a small institution in the alpine forests of southern Germany was not happenstance. The project Mr. Robin works on, developing a software tool to view the structural changes of proteins and other biological molecules, is a direct result of millions of dollars in federal financing Konstanz has received through a competitive, and controversial, grant program designed to put Germany's institutions on the global map.

"The Excellence Initiative," he says of the program, "was my main attraction."

Konstanz is one of nine universities that have earned a coveted designation by the German government as being among the nation's strongest.

The project, which began in 2005, has unleashed a new dynamic that has reshaped German higher education, demolishing the pretense of egalitarianism and forcing universities to focus on defining their mission and sharpening their focus.

"This kind of competition set free a lot of new forces within the universities," says Margret Wintermantel, president of the German Rectors' Conference, which represents the heads of the country's 258 institutions of higher education. "Over all, we are very positive about it."

Annette Schavan, Germany's minister of education and research, says the intent of the program has been to enhance the international visibility of the country's universities as centers of research, and to make them more attractive for outstanding students and researchers from around the world.

"The challenge of global competition (in the academic sector) between universities as institutions was openly addressed for the first time," she said in an e-mail message.

While many academics are indeed happy with seeing billions of dollars pumped into the country's higher-education system, questions linger about the sustainability of the changes given the short-term nature of the financing. Others question the emphasis on research over teaching or remain uncomfortable with the idea that some universities are considered better than others.

The historic excellence of many of Germany's universities is beyond question. Some institutions enjoyed such renown that the names of the cities in which they are located, such as Göttingen and Heidelberg, have long been synonymous with German academe.

In the 19th century, Germany gave the world the Humboldtian model, widely considered to be the forerunner of the modern research university.

In the post-World War II era, however, as the country recoiled from the elitism encouraged during the Nazi years, egalitarianism became the defining ethos for German universities, nearly all of which are public institutions.

"We had this tradition that all are kind of equal," says Ms. Wintermantel. "Of course, everyone knew this was not true, this was a fiction."

All too real, however, was the fact that the country's once pre-eminent universities no longer commanded universal esteem, and the depths to which they had fallen was driven home by the relative dearth of German institutions in the top echelons of the newly influential global-rankings tables, dominated by American and British universities.

In 2004 the federal government proposed the Excellence Initiative in a bid to foster outstanding research and propel more German institutions ahead in the rankings.

Yet the notion of rewarding individual universities for excellence was still controversial enough that the word “elite” was quickly expunged from official discussion of the program.

Cash Prizes

The project also faced political resistance from Germany's 16 *Länder*, or states, which control higher education in the country. Only after lengthy negotiations was a framework agreed upon to provide the necessary \$1.9-billion, or \$2.3-billion, for the multiyear project.

The program was structured as a competition, with winners selected in three areas by the German Research Foundation and the German Council of Science and Humanities.

The first category was the creation of graduate schools—itself a departure from the traditional German doctoral-training model based largely on a personal professor-student relationship.

The 39 winning programs represented a range of disciplines, with an emphasis on science and technology. Winners in the first category received an average of \$1.23-million a year over five years.

The program's second category selected 37 proposed “clusters of excellence,” consisting of networks of research institutes, companies, and government organizations working together around a central university hub “in research fields of particular promise for the future.”

Here, too, the winning entries were skewed toward the sciences. The winning clusters received \$8-million a year for five years.

The most competitive strand was the third, in which institutions were able to compete only if they had submitted at least one winning entry in each of the first two groups.

Universities were asked to present strategies for how they would develop their cutting-edge research and cultivate young talent.

Just nine were chosen in this category, which brought with it \$16.6-million a year in additional money. In effect, the government had created Germany's Ivy League.

Ms. Wintermantel, of the rectors' association, acknowledges that failing to secure the coveted designation has forced many universities into a sometimes painful process of self-examination.

It has also encouraged many to begin looking for other sources of external financing, she says, as money from

the states alone is no longer sufficient.

“They must now sharpen their profile and try to get other resources,” she says.

Changes in Konstanz

Even before it won acclaim, the University of Konstanz was something of an anomaly. Founded in 1966, the university is small by German standards, with just 10,000 students and 184 full professors.

It is also unusual in consisting of a single contained campus on the outskirts of the city in which it is based—a setup that may be common in the United States but is very different from the typical urban German campus of disconnected buildings scattered throughout a metropolis.

Sabine Sonnentag, a professor of psychology and the university's vice rector for research, says that its small size means that the \$123-million in extra money it will receive through the Excellence Initiative from 2007 to 2012 “is a major financial impact.”

The campus buildings are almost all interconnected, further facilitating communication among researchers in different departments who, in other circumstances, might not interact as easily.

The university's new graduate school in chemical biology won financing in the first round of the awards, and the extra \$1.2-million a year has helped to support some 70 students.

“We decided the only way to succeed in the natural sciences was to combine forces,” says Martin Scheffner, a professor of biology, of his collaboration with the chemistry professor Andreas Marx.

The program has helped attract students from abroad as well as retain top students who did their undergraduate work in Konstanz and might otherwise have been tempted to pursue graduate studies elsewhere, says Mr. Marx. The money has also allowed new research liberties, he says. “We get to spend very freely on projects—in my time as a scientist, we have never experienced this before.”

The Excellence Initiative has also helped Konstanz circumvent Germany's hierarchical and rigid university structures.

The university has created a new Zukunftscolleg, or institute aimed at promoting young researchers. That is a special challenge in a country where the path to a full professorship is notoriously long and arduous.

“We don’t have assistant professorships in Germany,” says Giovanni Galizia, a professor of neuroscience and the institute’s director, who did his doctoral work at the University of Cambridge and was an associate professor at the University of California at Riverside before returning to Germany.

“You can be an assistant to a professor, but you don’t have the independence of American assistant professorships,” he says. “We lost many good ideas because young researchers don’t have independence.”

The university cannot create new permanent positions because staffing levels are controlled by the state, but the college now has 38 young researchers on one- to two-year fellowships in a range of disciplines. It also awards a handful of senior fellowships, which have been especially attractive to researchers in the humanities, Mr. Galizia says.

Karsten Lambers has a Ph.D. in archaeology and is working on a project in conjunction with the computer-science department. He hadn’t originally considered applying for a postdoctoral position at the university because it has no archaeology department, but its interdisciplinary approach piqued his interest, and he won a fellowship allowing him to explore the use of satellite remote sensing in archaeology.

His research, which relies on high-resolution images from space, is expensive, and the financing that he has secured through the Zukunftscolleg could be career-defining.

“This is probably the only chance for me to get a job to do this kind of work,” he says. “With the traditional structures of archaeology in Germany, I wouldn’t get this kind of chance.”

Paying for more young researchers to travel abroad to attend conferences is another direct result of the Excellence Initiative. “This is no big deal elsewhere, but in Germany the system has been very difficult,” says Ms. Sonnentag.

The university’s Welcome Center, set up in 2008, is another innovation. The center occupies a ground-floor office in the main administrative building from which four staff members offer visiting scholars and researchers help with immigration advice, housing, and even pickup from the Zürich airport.

The university’s holistic approach to supporting young researchers is one of the cornerstones of its institutional strategy. The focus includes specific outreach to female

researchers, who are even more underrepresented in German universities than in other Western countries.

“We’re really asking, How can you build an infrastructure where young researchers can combine research and family?” says Ms. Sonnentag. There are legal limits on how money from the government program can be used for building projects, but a new child-care facility will be one of the physical legacies of the program.

Return to Mediocrity?

The pride and excitement at Konstanz’s success are evident everywhere here, in the many posters dotting the campus with ubiquitous references to “exzellenz” and the plans for the official opening of the new Zukunftscolleg building. But the temptation to bask in the glory has been tempered by concern about what lies ahead when the money runs out.

Focus has already shifted to the next round of the competition. “It’s very, very important for us to be successful again,” says Ms. Sonnentag.

The program’s limited duration will hinder the creation of lasting legacies, its critics say. In the past year, France announced its own program for fostering excellence in higher education. The program was inspired in part by the German model, with the key distinction that it will provide long-term financing through a large government loan.

“The big problem of the Excellence Initiative is that this is running for five years, then another five years,” says Mr. Marx, the chemistry professor and co-founder of the new graduate school in chemical biology.

Strengthening German universities will require a long-term financial commitment, he says. “What does it mean if it ends after 10 years? Are you saying excellence is over, then it’s back to mediocrity?”

The federal minister emphasizes that the program’s most important role is as a “kick-off for change,” and not as a long-term source of financing. “Permanent additional funding would not automatically foster the competitiveness of our universities,” Ms. Schavan says. “The Excellence Initiative is an important, but not the only, means we have to strengthen our universities.”

Mr. Galizia, of the Zukunftscolleg, agrees that success in the next round of the competition will be important but says that enough changes have already been made to sustain the university’s momentum, even if its bid fails.

“We have backup scenarios,” he says, noting that private money has become a more acceptable source of financing for German universities than was the case just a generation ago, and constitutes a growing share of the university’s revenue stream.

Universities like Konstanz may soon face even greater pressure to seek additional sources of income. Recently announced state budget cuts have hurt universities and prompted fears that the even some programs affiliated with the Excellence Initiative could be imperiled.

Critics have also said that the program’s emphasis on research has shortchanged teaching, which even some supporters concede.

Benjamin Wohnhaas, a second-year student of politics and management at Konstanz and a member of the student government, echoes the view of many students when he says that “we would prefer an Excellence Initiative about education, of course, and not just about research.”

Still, he welcomes the program’s overall impact.

“Personally, I’m glad we are one of the winners of the Excellence Initiative. We got more money, and our image improved in Germany and abroad.”

The competition for the next round of financing will include a greater focus on teaching, a shift that the rectors’ conference and other groups have welcomed, and a separate program has earmarked additional money “to enhance the quality of teaching in higher education,” Ms. Schavan points out.

Despite its limits, there is consensus that, in just a few years and with a level of financing that by American standards is relatively small, the program has had a transformative impact on German higher education.

Ms. Schavan says it is already helping to make Germany a more attractive place to study, research, and work, drawing students, such as Mr. Robin, who would otherwise have ended up doing their graduate work in the United States or Britain.

Attachment B

Go8 response to the Report of House of Representative's Standing Committee on Industry, Science and Innovation Inquiry into Australia's International Research Collaboration

30 July 2010

Mr Mark Paterson AO
Secretary
Department of Innovation, Industry, Science and Research
GPO Box 9839
Canberra ACT 2601

Dear Mark

Inquiry into International Research Collaboration

I am writing to provide a Group of Eight (Go8) response to the Report of House of Representative's Standing Committee on Industry, Science and Innovation Inquiry into Australia's International Research Collaboration released in June 2010. The Go8 hopes that these comments will be taken into account when the Government is preparing its response to the Inquiry's recommendations.

The Go8 welcomes the Inquiry's recommendations that DIISR strengthen its engagement in international research collaboration through the establishment and funding of a successor program to the International Science Linkages program.

At the national level, the chief impediments are a lack of strategic focus in Australia's international research collaboration, a lack of coordination of Australia's bilateral research approaches and a lack of funding. The Go8 considers that there remains a need for the strategic funding of international research collaboration especially in relation to:

- Major research facilities
- Major international research projects
- The strategic funding of collaboration with countries which are rapidly developing their research capability (for example India and China), and
- The strategic funding of collaboration with countries for other reasons, for example, for aid purposes or collaboration in research areas of strategic importance to Australia

In the past, the International Science Linkages Program (ISL) administered by DIISR has served this role. However, the program has suffered from underfunding and a lack of a cohesive Government approach to international research collaboration.

The Government must put in place a coherent international research collaboration strategy if Australia is to maintain its research competitiveness and prosper economically. Such a strategy requires that the Government actively explore government-to-government agreements relating to participation in major international research facilities, develop a national strategic assessment capacity for future international research collaboration, and assess the appropriateness, against international benchmarks, of mechanisms in place to enable Australian researchers to actively participate in global knowledge networks.

Such a strategy would also pick-up the Inquiry's other recommendations for the establishment of a scheme to support travel expenses of early career researchers and increased funding for the Australia-China Science and Technology Program.

The Go8 also welcomes the proposal to revitalise the science counsellor program as an integral part of Australia's strategy for engaging in international research collaboration. The counsellor program has the potential to contribute strongly to the development of Australia's international research collaboration.

The Go8 does not support the Committee recommendation that 10 per cent of Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) successful grants should be allocated to early-career researchers (ECRs). Such a quota would serve to undermine the ARC and NHMRC peer-review processes. ECRs are best supported through targeted assistance and the Go8 would support the continuation of the current ARC mechanisms to assist ECRs. The NHMRC should be encouraged to develop similar mechanisms. The Go8 supports the recommendation that all competitive grants need to fund the full cost of research.

The Go8 does not support the recommendation that the ARC and the NHMRC allocate a fixed percentage of research funding to 'blue-sky' research. Such a recommendation does not recognise the current multi-dimensional nature of much research where projects can simultaneously involve 'pure' and 'applied' aspects. Rather the Go8 supports selectivity and concentration of research based on research excellence.

The ARC currently allows Australian researchers to expend funds overseas if this is required by the Project. However the ARC does expect that partner investigators will bring their own funds to the project as a true collaboration. While this is generally appropriate for collaborators in OECD countries and countries such as Singapore, exceptions might be made for collaborators in third world countries or for research which is of strategic value to Australia.

The Go8 believes that serious consideration should be given to bilateral funding schemes with a streamlined application process, consisting of both countries setting aside a defined total amount of funds, with each country separately administering the granting process. The Go8 uses the model in the Go8 DAAD research collaboration scheme and particularly recommends its emphasis on research students and early career researchers.

Australia's approach to decision making about participation in major multilateral international research facilities and networks has tended to be ad hoc, reactive to the advances of others, and considered from a sectional rather than national interest perspective. Certainly, there are some ventures where Australia has shown strategic leadership, such as the Gemini project, Australia's Academic and Research Network (AARNet), and the Square Kilometre Array. In other areas, such as the human genome project, Australia was left behind. This contrasts with the approach of other national governments. The solution is for us to join with, rather than compete against, our northern hemisphere counterparts. We need to explore co-investment in research platforms, shared facilities and networks and full participation in the creation of cyber-infrastructure and associated data services.

Administrative complexities associated with bilateral agreements could be reduced through the presence of an Australian Government Agency with the power to sign agreements with international partners or a standard template for international agreements. Currently, participation in the European Framework Program is hampered by the EU struggling to engage with multiple Australian institutions.

The Go8 supports the establishment of an International Research Collaboration Office to consult with stakeholders in Australian research and to act as a conduit between Australian researchers and overseas research organisations and funding bodies. Such an Office could play the role of providing advice on the funding requirements of international funding agencies such as the [US] National Institutes of Health and the [US] National Science Foundation.

The Go8 supports the recommendation that the Minister for Innovation, Industry, Science and Research be given full ministerial responsibility for supporting international research collaboration including medical research.

The Go8 considers that the Inquiry's recommendations about immigration matters are limited and urges the Government to reconsider its approach to immigration laws as they pertain to researchers to ensure that our immigration and visa requirements for both short and longer-term visits by international researchers promote rather than impede researcher mobility. Immigration barriers make it more difficult to build and maintain strong research networks and collaborations with international partners.

Go8 welcomes the recommendation that researchers visiting Australia for more than 6 months have access to public education for their school age children. In addition the Go8 would like to see international research students permitted to stay for a period after submission of their thesis so as to allow the finalisation of their thesis examination and their research.

The Go8 would also like to recommend that the Government increase the number of International Postgraduate Research Scholarships (IPRS) to assist in recruiting top-flight international research students and enhance international research collaboration. As IPRS awards do not include stipends, the Government also needs to look at making available stipends for international research students.

The Go8 would be happy to discuss these issues further.

Yours sincerely



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Go8 Chair