CHRIS MARLIN

# 10. WORLD-CLASS RESEARCH PERFORMANCE THROUGH RESEARCH FOCUS AND THE STRATEGIC USE OF RESEARCH RESOURCES

## INTRODUCTION

Many universities are adopting a more strategic approach to focussing their investment in research, as part of improving the research performance of the university and hence being able to compete more successfully as a world-class university. However, focussing research activity in universities necessarily means concentrating research resources (including not only funding, but also staffing and other forms of support and investment) on some areas of research, at the expense of others. Given that this concentration of resources will be as much about what is not being supported as it is about the areas that do receive support, it is important that the academic schools of the university are engaged in the decisions about this resource concentration.

Flinders University is an Australian university which has improved its research performance through a process of focussing its research activity and investment on a relatively small number of areas and these, termed Areas of Strategic Research Investment (ASRIs), were chosen through a competitive process with clear criteria. This paper describes aspects of the Flinders approach to identifying and supporting these areas of research focus, concentrating particularly on how the various forms of research resources were invested differentially and how the broader academic community was engaged in the process of their selection.

The first part of the paper discusses the reasons why universities seeking to improve their research performance are opting to channel their available resources in support of research in a limited number of areas. The context of Flinders University at the beginning of the process in 2002 is then described, as is the approach employed to identify the areas on which the resources were to be targeted. Finally, some comments are offered on the effect of this strategy on the research performance of this institution.

## FOCUSSING RESEARCH - WHY DO IT?

Universities aspiring to be world-class are increasingly focussing their investment in research, which means directing more of their research support into a restricted set of activities, thereby reducing the amount of such resources available for other areas. There are many factors that are prompting universities to take such action, the principal ones being as follows:

*N.C. Liu et al., (eds.), Paths to a World-Class University: Lessons from Practices and Experiences, 195–203.*

- Many fields of research are becoming very expensive, making it difficult for most universities to establish and maintain the necessary infrastructure across a large number of such areas, especially those where the number of researchers at the institution using the infrastructure is relatively small.
- The marketplace for research funding, particularly that for large-scale projects from governments and private sponsors for establishing centres of excellence of various kinds, is becoming progressively more competitive. Thus, universities are driven to promote their research capabilities in ways that distinguish them from other competing institutions. Consequently, the formation of differentiated collections of areas of research focus can be useful in that they project a distinctive research profile, contributing to what Connell (2004) calls "shaping a distinctive and well integrated institutional profile".
- Some governments have encouraged the universities within their respective higher education systems to differentiate themselves from other universities within the system, in terms of the areas of research on which the institution is focussed and into which it is investing government funding. For example, such a process began in Australia with the Green Paper on research (Kemp, 1999a) and the subsequent White Paper (Kemp, 1999b), which encouraged universities to set their own strategic directions in research, form judgements as to their particular strengths and capabilities in research, and to allocate resources accordingly.

Despite these compelling reasons to focus the research activities of a university, the internal process of doing so can still be quite controversial and potentially disruptive to its research performance in the short term. There is understandably a tension between the desire of the university management to improve research performance as a whole on the one hand, and the desire of individual researchers to pursue their own research agenda on the other hand. For, as noted by Taylor (2006), research is "an intensely personal activity, strongly dependent on the ideas and imagination of individuals or groups of individuals" and it "does not lend itself to control and management". In other words, universities often rely heavily on the drive and enthusiasm that researchers have for their research activities; as Hogan and Clark (1996) point out, research initiatives are usually generated by individual academics who grasp the best opportunities as and when they come along.

## FOCUSSING RESOURCES - WHAT CAN BE FOCUSSED?

As already mentioned above, some of the reasons for focussing research relate to being able to concentrate limited resources on fewer areas and thus, there is a strong link between focussing research and focussing resources. In fact, it is the view of some that this is the sole purpose of focussing research; for example, Hogan and Clark (1996) state that the purpose of a research plan is "to set priorities for development and influence the deployment of resources". Nevertheless, within each university there are typically many different kinds of resources being used to support research:

- One of the more obvious sources is externally-derived funding, often referred to as *research income* and in this regard, Taylor (2006) says that "much research

income is 'in and out', to be spent on a particular grant or contract". Moreover, because these funds have been obtained for a specific purpose, there is not much that can be done to redirect them strategically. However, in some cases, there may be "overheads" or other charges imposed by the institution and these may be used to invest strategically.

– Another obvious source of research support frequently available is a central university fund specifically set aside for this purpose, often known as the university's *research budget*. There are typically many demands on this budget, but it is also a resource which can, at least to some extent, be used strategically.
– As noted by Shattock (2003), there has been an increasing tendency to devolve detailed decision-making about resource allocation downward, as universities have grown larger. That is, there are resources which are distributed across the institution, particularly within the academic areas, and hence there is the potential for these resources to be used strategically. Although these resources will include some discretionary funding, the most important is usually that represented by the *staff time for research*, the monetary value of which will often dominate the resources available to academic areas.

Any process of focussing resources is, of course, as much about what is not being supported as it is about the areas that do receive support and hence may well cause some tensions within the institution, as already mentioned. Thus, it is important that the academic staff of the university is engaged in the decisions about resource concentration.

## CASE STUDY: FLINDERS UNIVERSITY

Flinders University is located in Adelaide, South Australia, and was established in 1966 during a period of nationwide expansion of higher education. Over the period 2002–2009, the university embarked upon a process of identifying a collection of targeted areas in which to differentially invest its research resources. This collection of areas of research focus was termed the Areas of Strategic Research Investment (ASRIs), signifying that they were being identified for the purposes of selective investment.

This section describes the context for the institution, both in terms of its positioning within the Australian higher education system and its performance at the beginning of this process. It then outlines the path taken to identify the ASRIs and finally presents some information on the impact of adopting this targeted strategy in relation to the research performance of the university as a whole.

### *Policy and Funding Context in Australia*

As already mentioned above, the Australian Government signalled, over the period 1999 to 2002, an expectation that universities would identify their areas of research focus and invest accordingly. This occurred, for example, through reporting mechanisms, such as Research and Research Training Management Reports, which were obligatory for institutions receiving government funding for research purposes and

required reporting on each of the following, so as to identify "areas of research strength" (DEST, 2005):

- Numbers of research students;
- Research income;
- Research-active staff; and
- Qualifications and activity of staff who supervised research students.

Furthermore, this period involved government policy shifts away from an emphasis on traditional grant sources towards a broader view of the kind of research success which would garner government support. Moreover, significantly, this also coincided with a period in which the pressure on traditional funding sources increased as a result of the greater volume of demands coming from a substantially expanded higher education sector. These factors meant that non-traditional sources of research funding took on increasing importance.

*Flinders University within the Australian Higher Education System*

Flinders University is a relatively small university within the Australian system of around 40 universities. In terms of staffing, for example, in 2002 it had a little over 2% of the staff within the Australian higher education system and was ranked 24th for size, on the basis of academic staff; that is, there are certainly much larger universities in the Australian higher education system. Furthermore, by 2002, it was clear that the university was progressively representing a smaller and smaller proportion of the Australian system, in the sense that its size relative to other Australian universities was decreasing. Despite its relatively small size, it had maintained a wide range of disciplines and consequently had attempted to support a similarly wide range of areas of research. One measure of discipline spread relative to size is illustrated in Figure 1, where the number of staff is plotted against the number of fields of education taught, for each Australian university in 2002[1]. Flinders University is circled in this figure, showing that it was teaching in about half of the possible fields of education, but it had less than 30% of the staff of the largest Australian university. Consequently, the number of staff contributing to research within most of the disciplines covered by Flinders was relatively small compared to competitor universities. Furthermore, most of these areas of research were under-resourced, when compared with what would have been required to establish them as research concentrations of national and international significance. For these and other reasons, the university was not performing as well as would have been expected, in relation to playing a leading role in the national centres of excellence which were being established at this time (e.g., within the Cooperative Research Centres programme).

Nevertheless, despite these issues the university maintained a good position in national and international ranking systems, being ranked ninth overall in the Melbourne Institute rankings of Australian universities in 2004 (Williams and Van Dyke, 2004) and 2005 (Williams and Van Dyke, 2005), for example. Moreover, in the Shanghai Jiao Tong University's 2004 Academic Rankings of World Universities, it was placed between 12th and 14th in Australia and between 404$^{th}$ and 502$^{nd}$ in the world.

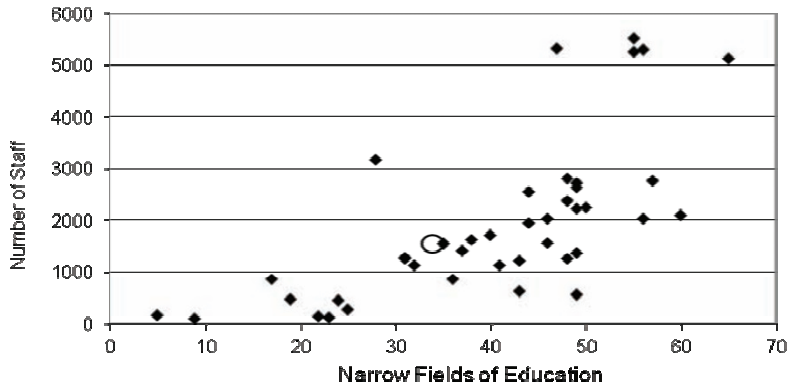


*Figure 1. Narrow fields of education vs. numbers of academic staff for Australian universities, 2002.*

*Focussing Research at Flinders University*

By about 2002, it was clear that Flinders University needed to focus its research and not only was there encouragement from the Australian government to do so, but, more importantly, it was finding it increasingly difficult to support the wide range of areas of research which had grown to expect this support. It was also becoming increasingly important to be able to project itself externally as having a particular set of research concentrations, as part of positioning the institution in the external environment.

The first attempt at identifying the areas for research focus, the ASRIs, took place over the first half of 2002 and total of 23 ASRIs were selected through a process which involved a special-purpose committee that examined research performance data for the university. This process also involved extensive discussion across the university, with Flinders University Council members, the major academic committees and other groups and there was an article written for the main internal publication explaining the process and inviting input. Nevertheless, when the 23 ASRIs were announced, there was a wide-spread negative reaction, mostly to the effect that the researchers had not understood that the process was going on and that they had not been consulted. Consequently, the results of this first attempt were put aside and another approach was adopted; this experience is consistent with Mintrom's (2008) comment that "university administrators must be realistic about how much management-driven change they can impose upon the research function at any given time".

The second, very successful, approach was carried out over the period 2004 to 2005 and involved groups of researchers getting together, typically as a result of some orchestration by the leadership within their faculty or at the university-wide level, subsequently submitting a proposal for funding to establish an ASRI. Thus, this was essentially a bottom-up process with direct financial incentives, as opposed

to the largely top-down process used at the first attempt. As a result, the ASRI selection process became much more like the kind of competitive grant process so familiar to successful researchers and hence they appeared to be much more comfortable in engaging in it.

A single set of clear criteria, summarized in Figure 2, was used across the five rounds of consideration of proposals for ASRIs over the two-year period and the consistency of these criteria and their application by the panel considering proposals was deemed essential. Feedback to unsuccessful bids in each of the first four rounds (the fifth round was only for ASRIs which had been proposed previously) led to a process of significant institutional learning over the two year period about what kinds of proposals were likely to be successful.

The selection of the ASRIs was carried out by a panel consisting of the Deputy Vice-Chancellor (Research), the head of the research office, the heads of the four faculties and three members external to the university. Because of the significant research resources represented by the staff time for research, it was considered important that the heads of the faculties be full participants in the decision-making process and hence be committed to supporting those ASRIs that were selected. Equally important was the involvement of the external members of this panel, because their presence discouraged deals of convenience between the heads of the faculties.

(a) the impact of the proposed ASRI on the research activity of the University, in terms of the number of researchers and the extent to which the research activity of each will be enhanced;

(b) how the proposed ASRI draws on the University's research capability to define an area which is distinctive for the University;

(c) how the proposed ASRI will benefit the University's postgraduate research students;

(d) the extent to which the University has national or international recognition for our leadership in the area covered by the proposed ASRI, or the extent to which such leadership can be developed;

(e) how investment in the proposed ASRI will return benefit to the University;

(f) the existing research strengths on which the proposed ASRI builds;

(g) the synergy between the proposed ASRI and areas of education - either undergraduate or postgraduate - which are distinctive for the University;

(h) whether the University is likely to be a major contributor in the area covered by the proposed ASRI for the next several years.

*Figure 2. Criteria used in the ASRI selection process.*

*Funding the Areas of Strategic Research Investment*

The initial funding available to the ASRIs was up to $100,000 per year for three years, with all of this funding coming from the central research budget and the average annual amount granted was approximately two-thirds of this maximum. Some of the faculties also contributed additional funding in this initial phase and this was taken by the panel to be a positive sign of that faculty's commitment to the proposed ASRI. Although there were no constraints on the nature of the funding requests submitted with the proposals, a pattern soon emerged: virtually all of the ASRIs principally wanted someone to assist both with internal networking of members and identifying external funding opportunities. These *research facilitators* were variously called either research development officers or business development managers, the role of whom is explored in more detail in Marlin (2009). Even though some faculties contributed to supporting the ASRIs in various ways, the core funding was entirely from the central research budget and ultimately, there were 17 ASRIs, as listed in Figure 3, thus illustrating that the amount of central funding required was substantial. However, the same central research budget also provided for allocations to faculties for research and therefore the latter's discretionary budget was substantially decreased as more and more of the former went to fund the ASRIs. This trend reached its peak in 2007 when about $1.2M was taken annually from the research budget for the ASRIs.

As a result of this process, some faculty-based schemes which had been responsible for distributing fairly small amounts of research funding to reasonably large numbers of researchers, were abandoned. This outcome contributed significantly to the overall effect of aggregating support to a smaller number of areas of research and hence allocating more and more of the university's research resources on a strategic basis. It also led to a much greater alignment of research strategy and strategic allocation of resources between the central university executive and the faculties.

As the initial three-year period of centrally-funded investment in the ASRIs was coming to an end for the first tranche, discussions were held with the faculties to determine the extent to which they would be prepared to support this group of

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| Aboriginal Health Research Unit | Bioknowledge |
| Applied Cognitive Psychology | Educational Futures |
| Cancer Control Alliance | Eye and Vision |
| Clinical Change & Health Care | Health and Society |
| Coastal & Catchment Environments | Immune Strategies |
| Cultural Heritage & Cultural Exchange | International Asia Pacific |
| Medical Devices & Technologies | Musculoskeletal Health |
| Nanostructures & Molecular Interactions | Neuroscience |
| Social Monitoring & Policy Futures | |

*Figure 3. The Areas of Strategic Research Investment (ASRIs) for Flinders University.*

ASRIs more directly. The specific form of these discussions was to establish how much funding the faculties would be prepared to put into each ASRI, if this were to be matched equally from the central research budget. Thus, there was a transition from the ASRIs being centrally funded to their being supported through co-investment with the faculties. This approach ensured that those ASRIs that continued to be funded were those that the faculties really supported and resulted in even more strategic use of faculty research funding over time, thereby continuing the process that was begun during the initial phase of ASRI development.

*Impact on Research Performance*

In terms of whether the ASRI strategy and the consequent concentration of research support has been a success, it is clear that the ASRIs have had a significant positive impact on the research performance of Flinders University. For example, Flinders University's research income performance has improved very significantly since the ASRIs were introduced, with a 67% increase over the last three years; the approach has been particularly effective in developing new contract research with government and industry, where the increase has been 83% over the last three years for which data is available. For further discussion of this impact, see Marlin (2009).

## CONCLUDING COMMENTS

Focussing research - and the resources which support it - is a key strategy for universities attempting to improve their research performance, and hence increase their international standing and relative position. This paper has explored some of the issues to be considered when conducting strategic research planning with the goal of focussing a university's research activities, such as identifying the sources of research support which may be concentrated and engaging the university research community in the process of selecting the areas of focus.

The experience in developing a particular approach to focussing research - involving the creation of a collection of Areas of Strategic Research Investment (ASRIs) - at Flinders University has been outlined. This approach was very successful at several levels:

– the level of engagement by the researchers in the process;
– the extent to which the University's research resources have been concentrated, right across the University; and
– its impact on the University's research performance.

The ASRIs are now entering a new phase of their development, with further concentration of research support through the reduction in the number of ASRIs being supported.

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## NOTES

[1] The data used is taken from *Aggregated Student Enrolments* and *Selected Staff Higher Education Statistics*, Department of Education, Science and Training, Australian Government, Canberra.

## REFERENCES

Connell, H. (Ed.), (2004). *University research management: Meeting the institutional challenge*. Paris: Organisation for Economic Co-operation and Development.

DEST. (2005). *Institution assessment framework information collection - 2005 instructions*. Canberra: Department of Education, Science and Training, Australian Government.

Hogan, J., & Clark, M. (1996). Postgraduate and research organization and management. In Warner, D., & Palfreyman, D. (Eds.), *Higher education management: The key elements*. Buckingham: The Society for Research into Higher Education and Open University Press.

Kemp, D. A. (1999a). *New knowledge, new opportunities: A discussion paper on higher education research and research training*. Canberra: Department of Education, Training and Youth Affairs, Australian Government.

Kemp, D. A. (1999b). *Knowledge and innovation: A policy statement on research and research training*. Canberra: Department of Education, Training and Youth Affairs, Australian Government.

Marlin, C. (2009). Focussing research in universities: Implications for research management. *Perspectives - Policy and practice in higher education*, *13*, 42–47.

Mintrom, M. (2008). Managing the research function of the university: Pressures and dilemmas. *Journal of Higher Education Policy and Management*, *30*, 231–244.

Shattock, M. (2003). *Managing successful universities*. Maidenhead: Society for Research into Higher Education and Open University Press.

Taylor, J. (2006). Managing the unmanageable: The management of research in research-intensive universities. *Higher Education Management and Policy*, *18*, 1–25.

Williams, R., & Van Dyke, N. (2004). *The international standing of Australian universities*. Melbourne: Melbourne Institute of Applied Economic and Social Research, The University of Melbourne.

Williams, R., & Van Dyke, N. (2005). *Melbourne institute index of the international standing of Australian universities*. Melbourne: Melbourne Institute of Applied Economic and Social Research, The University of Melbourne.

*Chris Marlin*
*University of Sussex, UK*