ENHANCING INTERNAL PROCESSES FOR RESEARCH FUNDING AT UoW: FOCUSING ON STRENGTHS

1 CONTENTS
1 CONTENTS ..........................................................................................................................................................2
2 EXECUTIVE SUMMARY .....................................................................................................................................3
3 BACKGROUND ..................................................................................................................................................4
   3.1 Current UoW Research Structures .............................................................................................................4
   3.2 Current Research Themes .............................................................................................................................5
4 THE WAY FORWARD ........................................................................................................................................6
   4.1 Revised Vision and Objectives .....................................................................................................................6
   4.2 Defining Research Strengths ........................................................................................................................8
   4.3 The URC and Faculties: a joint future ...........................................................................................................8
   4.4 Strategic Initiatives ......................................................................................................................................9
   4.5 Recognition of Research Excellence versus Research Strength .............................................................9
   4.6 Impact of Research on Other Areas of the University .................................................................................9

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2 EXECUTIVE SUMMARY

This Paper outlines some of the major issues facing UoW in research management at the current time as we plan for the next triennium of research funding. The key elements of the paper are:

- identification of the strengths and weaknesses of the current processes of reviewing and resourcing research units and research students within research strengths;¹
- identification of some of the major external factors impacting on the research environment;
- a discussion of how we can retain the best aspects of our matrix management system whilst simultaneously integrating central research planning with Faculty-specific objectives and planning;
- proposals for the way in which we can achieve a better focus on research strengths and better mechanisms for identifying future research initiatives and opportunities.

It is important for the discussion here not to confuse the concepts of strength versus excellence. "The efforts of a single researcher, no matter how prominent or excellent, do not constitute an area of existing strength, although this may form the basis of an emerging area of research strength in some circumstances."²

The paper has a number of specific proposals

1. That we revise the objectives of our research management strategy as outlined here and that this becomes the basis of the 2003 Research and Research Training Management Report (RRTMR).
2. That we adopt a new approach to management of internal research funding (depicted in scheme 1) that incorporates the following key elements:
   a. identification of 10-12 areas of research strength; which will then be supported by a base grant for three years and annual performance-based funding including funding for HDR students associated with the research strength;
   b. identification of, and support for, developing areas of strength and/or new initiatives. These areas will need to be aligned to strategic directions of faculties but the URC will continue to have a strong role in supporting cross-Faculty initiatives or areas;
   c. adoption of a different approach to funding researcher outside these areas that is competitive, allows for different levels/types of support and is aligned with, and lever support from, faculties;
   d. better integration of HDR students with research strengths and faculty planning.

It follows from a. that we discontinue the process of defining our research strengths in four broad research themes and a large number of research units and endorse a new guidelines for defined research strengths. It follows from c. that we need to better articulate the relationships between URC funding and Faculty planning. Processes to facilitate d. will be outlined in a separate paper.

Scheme 1: Schematic showing the proposed relationship between the URC, research strengths and Faculties.

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¹ A more comprehensive paper will follow focussing specifically on management of, and resources for, higher degree research students
² Research and Research Training Management Reports: Guidelines for Higher Education Institutions 2003, DEST. p.8
In summary, the following discussion paper identifies major research management issues facing the University and outlines changes to our management structure that will assist in the development and promotion of research excellence and improve our relative position within the sector in the longer term. These are simultaneously a consolidation of our previous Research Management Plan and a substantial and innovative revision of that plan. It both takes the concentration of resources to a limited number of research strengths to another plane, while rethinking and rejecting features and processes that have become counter productive. The plan will encompass reduced levels of reporting for research strengths and more flexibility for development of new ideas (which will no longer be dependent upon research unit triennial funding). It aims to reinfranchise faculty involvement with research in a structurally identifiable way and creates new emphasis on innovation and excellence.

3 BACKGROUND

3.1 Current UoW Research Structures

The University of Wollongong has a system of encouraging and directly supporting the research activities of its academic staff and postgraduate research students via annual funding allocations to Research Units. Thus, in many respects the concept of focussing on research strengths outlined in the White Paper (more below) is not new to us. A Research Unit is defined as a collection of researchers, engaged in research projects related by their study of a particular area or by the shared use of common infrastructure and expertise. These units have been reviewed on a triennial basis for a period of at least 10 years, with the last major review occurring in 2000 for the 2001-3 funding period. The funding provided to research units has been largely based on performance indicators that, with some minor variations, reflect formulae by which DEST has allocated research funding to UoW.

Research management at UoW is currently described as a matrix management system for both reporting lines and resource allocation. For example, each Institute Director reports to the PVC(R) on a regular basis on all matters of strategy and planning. Simultaneously, however, these Directors also report to, or negotiate with, the Dean of their Faculty on operational matters, such as space, travel, or technical staff. In some cases the PVC(R) is regarded as their line manager and acts on issues such as performance appraisals, leave applications etc., in other cases the Dean performs this role. In relation to resource allocation, research funds currently flow along both vertical (faculty) and horizontal (research unit) lines of a matrix. The Institutional Grant Scheme Funding received from DEST constitutes the budget of the URC, and the URC made this funding available to research units and for other research-related activities. However, the RTS funding flows to the faculties along with the Operating Grant, not directly to research units.

Because we are not a large university any potential for confusion arising from the matrix arrangements has usually been dealt with on a personal, case-specific level. However, if we are to significantly grow our research effort there needs to be greater definition of the respective roles of the PVC(R), Dean, Faculty Research Committees and Chairs, Heads of Academic Units (Schools and Departments) and Directors of Research Units.

Matrix management has served us well in the aggregation of research income enabling the PVC(R) and URC to direct funding to specific areas, in particular for the development and encouragement of multidisciplinary research teams, and in helping to concentrate support in limited areas. The current model, however, has a number of weaknesses. Some of these include:

- on-going problems in relation to management of research units viz a viz. academic units. For example, in cases where Research Units have externally-funded staff that carry a substantial supervision load there have been varying levels of tension concerning the flow of RTS funds only to faculties.
- faculties also seemingly have little control over the activities of Research Units and as such they may be viewed (albeit short-sightedly) as diluting rather than enhancing the research effort of the faculty. Thus the matrix management structure has effectively left the core administrative and funding units (i.e. faculties) outside the research management process and created a number of anomalous management and funding scenarios.
- the current model of funding in which research units represent the only source of discretionary funding, combined with the fact that there are essentially no barriers to joining research units has resulted limited funds being “spread too thin”. That approximately 90% of academics in the University are members of existing research units means that we have not in fact concentrated our support in limited areas, except on the basis of total performance.

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3 Including the Faculty of Commerce, where the International Business Research Institute was disbanded in 2002, but the same level of funding achieved by IBRI has been provided to the Faculty in 2002 and 2003.
with a few notable exceptions, higher degree research students tend to identify with their supervisor and host academic unit rather than with research units.

• the current model of direct funding of research units has been based on the assumption that one performance-based funding model is appropriate to all areas of the University when clearly the test of time has demonstrated that this is not the case. Nor does the model easily allow for areas at different stages of development since the funding is retrospective over a three year period, resulting in a relatively long lag time between increased performance and being rewarded for that performance.

• many of the current URC funding schemes require an overly complex administrative process for distribution of small amounts of funding with limited returns (e.g. the new researcher scheme)

• the URC management committees, now the URC Standing Committee, have typically devoted the majority of their time to administering and assessing these smaller schemes. Similarly, the annual review of research units is onerous for both the URSC and the research units themselves and has added little to overall planning. That available “committee” time could be better utilised in identifying and supporting new initiatives and in strategic planning.

A revised research management plan should therefore aim to retain the best elements of the matrix management structure whilst identifying and rectifying the problems that have arisen there from.

3.2 Current Research Themes

As noted above from 2001, each Institution has been required to submit a Research and Research Training Management Report (RRTMR) for annual approval by the Minister to be eligible for funding for research and research training. A key requirement of the RRTMR is that institutions are required to identify their areas of existing and emerging research strengths and provide evidence in support of these claims.

In the last triennium (2001-3), UoW’s areas of research strength were defined as four themes viz. Materials & Manufacturing, Communication & the Information Society, Environment & Quality of Life, and Policy & Social Impact. Within these themes there are 31 units (including 24 URC Research Units; 3 ARC Key Centres and 4 Cooperative Research Centres (CRCs).

The research themes as descriptors of our research strengths have served us well in a number of respects. First, the themes were sufficiently broad to encompass a large proportion of existing research and research students within UoW and thus we had no difficulty in providing the relevant statistics to support the claims to have research strengths in these areas. Second, the fact that almost all our researchers were covered under the themes allowed the concept to be introduced relatively painlessly by circumventing exclusion (and therefore disenfranchisement) of active researchers during the process. This is particularly relevant considering the angst suffered at many other institutions undergoing this same process. Finally, the descriptors lent themselves readily to the marketing and promotion of our research efforts by enabling our research to be defined in terms understood by the general public (but not necessarily to prospective students who identify with more narrow descriptors).

The disadvantage is that the themes are so broad and the 31 units largely undifferentiated (apart from the Category A, B and C divisions), that neither the four themes nor the 31 units can be used in any strategic way to direct resources in other areas of the University’s operations (more below).

Further, a number of unforeseen consequences have arisen since the introduction in 2001 of the practice of reporting our research outcomes under the current four themes. First, despite the flexibility provided by DEST to institutions in defining research strengths, the data provided in the RRTMR are aggregated for sector wide reporting and comparison under three research clusters. Namely:

- Science and Technology
- Health and Medical Research
- Arts, Humanities and Social Sciences

Consequently, UoW research performance data that we had meticulously documented under the four themes were effectively “lost” in the aggregated summaries of the 2001 RRTMRs, since our data were not reported specifically in these three areas. The impression one could gain on a cursory perusal of these aggregated data was that UoW, had no research strength in say, Science and Technology, which is clearly not the case. This was partially rectified in the 2002 RRTMR by a somewhat arbitrary division of the data in the four themes into these three clusters.

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4 This is covered under section 23 (1A) to (1E) of the Higher Education Funding Act 1988 (HEFA). A Research and Research Training Management Report (RRTMR) serves as a Research and Research Training Management Plan for the purposes of requirements under section 23 (1E) of HEFA.

5 Programmes covered by these provisions are the RTS; IGS, RIBG, APA and IPRS awards and the Regional Protection Fund.
Second, in press coverage of the 2002 RRTMRs, UoW was reported as having only 4 areas of research strength, in contrast to say UWS which has 12 and University of Sydney which has 21, thereby leaving the impression that we had only a few areas of research activity. That coverage caused a fair amount of aggravation across campus.

## 4 THE WAY FORWARD

### 4.1 Revised Vision and Objectives

The objectives outlined in the 2001 Research and Research Training Management Report (RRTMR) are:

**Our objective is to be firmly entrenched in the top tier of research-intensive universities in Australia.**

To realise this objective we have over the past decade adopted a number of principles. These are:

- Focus on areas of strength
- Structure research and research training across disciplinary boundaries
- Collaborate with business and industry
- Integrate research training with research units
- Make research management representative
- Use the budget to drive change

With time, and the changes proposed here, some of these objectives have become no longer relevant or practical. For example, the extent to which research training has been integrated with research units is highly variable. Nor will it be possible to achieve integration of all higher degree students uniformly within the framework mooted here because it would not be possible to maintain the same level of HDR enrolments if we were to only recruit students into our research strengths. Similarly, the URC budget has to some extent driven change but more substantial, long term change must be accompanied by integration of drivers for change within the broader (and much more substantial) budgets of faculties and other relevant units. Further, while using budgets to drive change may influence activities in the long term it will not realise some of the more urgent, short term goals required to lift our research performance to the next level.

**PROPOSAL # 1**

That we revise the objectives of our research management strategy as outlined below and that this becomes the basis of the 2003 Research and Research Training Management Report (RRTMR).

**Our overall objective is to support excellent research that has both a sustained benefit to the community and a high degree of national and international recognition.**

In pursuit of this objective we specifically aim to:

(i) Direct research support towards areas of existing and emerging research strength;

(ii) Provide a quality research environment for higher degree research students who provide a central and distinguishing focus of our research effort;

(iii) Emphasise and promote multidisciplinary research;

(iv) Promote effective partnerships with regional and national organisations and Australian industry;

(v) Integrate research objectives into planning processes at all levels of University operations and across all relevant functions;

(vi) Foster a “high performance culture” and implement strategies that encourage and reward both research excellence and effective collaboration.

### 4.2 Defining Research Strengths

For all the reasons outlined above it is now timely that we review both individual research units and also the rationale for the four research themes to redefine our research strengths as well as areas of existing and emerging excellence.
The following are proposed as **guiding principles** for determination of research strengths.

1. Research strength must be underpinned by a sustained and excellent performance. Consideration should be given to discipline-specific measures of research excellence in addition to the more global ones of research income, publications and student completions.

2. It is clear that a research strength cannot be based on the efforts of single researcher and his/her immediate research group. Without being too prescriptive about the size of a research strength, a guide would be that a minimum of 4-5 academic staff in continuing positions or funded via senior external fellowships (ARC or NHMRC) would be necessary to underpin a research strength and generate a competitive level of performance. Similarly it would be expected that research strengths incorporate 10 or more HDR students and a number of research fellows.

3. It must be evident that we would be able to retain the claim to have research strength in the area even if one or more of these key researchers were to leave the University for whatever reason.

4. Areas of research strength must involve collaborations between the researchers that have been demonstrated over an extended period (again a minimum of 3 years). Aggregations of researchers simply to achieve a competitive level of performance where there is no real opportunity for collaboration and thus is not a "good fit" will be actively discouraged. In general, this will preclude new groupings from being considered as areas of current research strength, however, we must retain the flexibility to consider situations where clusters of existing groupings might be aligned under a common thread to yield an area of recognised strength where there is a particularly compelling case to do this.

5. A research strength must provide evidence of external recognition. Further, external clarity and "brand names" should take precedence over internal considerations such as structural issues, and individuals seeking internal recognition. It follows that external endorsement of research excellence (ARC Centres, CRCs and other Centres of Excellence) will have a high priority when defining research strengths.

6. Research strengths should have been demonstrated over an extended period (minimum period 3 years) and performance clearly be on an upward trajectory.

7. There must be evidence of sustained research planning by the Director/Coordinator and other senior staff involved in the research strength.

8. A research strength must have a sizeable (again as a guide a minimum of 10) full-time equivalent HDR students associated with it. The activities of the research strength must include explicit plans for the provision and/or maintenance of a quality environment for higher degree research students. There must be demonstrated outcomes in terms of completions and other measures of research student success (awards, positions upon graduation etc.).

9. An area of research strength must define rigorous, performance-based criteria for membership that simultaneously take into account the potential of early career researchers.

PROPOSAL # 2

(i) that we discontinue the practice of defining our research in four themes;
(ii) that we engage in a process whereby current research units and centres (including externally-funded Centres) are reviewed to identify a number of research strengths that fit these criteria;
(iii) that we consider expressions of interest from groupings of research units or centres outside those that exist already only in exceptional circumstances;
(iv) that the URC recommend that the URSC develop guidelines and a timetable for implementation based on these principles
(v) that the URSC prepare a list of research strengths to be recommended to the Vice-Chancellor for approval

A summary of the proposed decision-making process is provided in scheme 2. Much of the information required to define research strengths is readily available. It is expected that 10-12 current groupings would meet the above criteria. We are also currently engaged in a process of mapping our research areas and opportunities specifically in relation to the Innovation Campus with the assistance of an external consultant from the Capital Technics Group. Collectively, we will be able to feed all this information into our decision-making processes.
4.3 The URC and Faculties: a joint future

With a smaller number of focused research strengths it is inevitable that some active and excellent researchers will fall outside our recognised research strengths. This presents several challenges opportunities:

- Development of appropriate funding mechanisms to simultaneously support the activities of such staff and students must proceed in parallel with the process of defining research strengths.
- Funding opportunities will need a balance to ensure that we encourage and support current and emerging research strengths whilst still supporting individual excellence amongst students and academic staff. i.e. there still needs to be clear financial incentives to reward those who are able to achieve the scale and focus resulting from collaboration.

The general thrust of the planning here is to shift the onus from the URC in providing specific guidelines to which researchers within faculties respond, to one where faculties develop specific plans and initiatives and then seek appropriate levels of funding to match these initiatives from the URC budget.

It is proposed that the way forward to address this is to create a joint pool of research development funding for each faculty. The size of the pool and the broad objectives for its expenditure would be negotiated for each faculty with some “buy in” from the faculty on an annual basis. Factors that need to be taken into account here include:

- the relative research performance of the faculty;
- the number and nature of emerging research strengths in the faculty;
- the number of research active staff in the faculty outside areas of research strength;
- the number of research students in the faculty outside areas of research strength;
- the number of new staff in the faculty;
- the current state of facilities for the HDR students within the faculty;
- discipline-specific requirements and performance measures;
- the faculty’s overall budgetary position;

The way such a scheme would articulate into the other activities of the URC is illustrated in scheme 1. There will need to be further discussion about the types of URC funding available to researchers outside research strengths and precisely which of the current schemes are collapsed into this pool and the pool used to fund research strengths and initiatives. As a starting point, however, it is envisaged that the new researcher scheme, the research student maintenance fund and some faculty-specific initiatives currently funded on an ad hoc basis would be combined and redistributed in this pool (noting that HDR student load will also be a factor in determining the overall funding to areas of research strength). It is expected that the URC will retain some University-wide funding responsibilities, including but not limited to the current pool for funding equipment via the RIBG, Pool 2 and the
URC Strategic Development Grants (formerly the ARC small scheme) because of the cyclic nature of the need for funding in these areas and to continue to foster competition.

The issues surrounding the integration of URC-directed research management with that of faculties will also be the subject of a further, more detailed discussion paper. This paper will both provide guidelines on the way in which the faculty development pools will be allocated and operate and further explore the role of the URC, faculties, Deans, Head of Academic Units, Faculty Research Committee and Faculty Research Chairs (or Associate Deans, Research) in the planning process.

4.4 Strategic Initiatives

The URC must retain the capacity to fund cross-faculty and major strategic initiatives. The starting point here is that internal research and faculty structures must not be an impediment to the development of new initiatives. Currently, funding of new initiatives and research collaborations outside research units is difficult because the performance-based funding model requires researchers to commit to a particular unit for three years and administration of performance indicators for researchers who are members of more than one unit is problematic. Thus researchers have often joined the unit where they perceive they might “get the best deal” rather than the one that represents a greater, but more uncertain, opportunity.

To circumvent this, the funding of strategic initiatives will be based on the case presented and the proposed budget, rather than strictly on performance indicators. Thus there should be more flexibility in the nature of the activity to be funded. Track record will still be important in determining the success and level of funding of strategic initiatives, but it is envisaged track record will be used in the same way as it is within external peer-reviewed schemes i.e. as an indicator of whether the proponents have the necessary background to undertake the work; as a measure of the extent to which they are likely to produce appropriate outcomes and as a differential indicator when two equally worthy cases are presented for funding from a limited pool. This will also provide the URSC with the flexibility to make decisions on track record relative to opportunity, in the same way as this is done within say the ARC. Further, funding may be for periods of between 1-3 years, which should encourage more risk in the decision making. Similarly, a cross-faculty initiative involving activities for HDR students (assuming those within faculties are funded via the faculty development pool) would need to take into account the track record of the students and supervisors involved.

It is not envisaged that the strategic initiative pool will become a de facto mechanism for funding of current units that do not meet the criteria for being an area of recognised research strength. More plainly, it is not designed to be the “B-level” funding source; however, it is likely that some of those units will seek funding from the pool on the basis that they wish to continue to work towards becoming an area of strength. It is also envisaged that a strategic initiative might include proponents who are members of existing research strengths. In that case, the research strength(s) would need to “buy in” to the initiative to preclude this being a mechanism for “double dipping”. A model for this has already been provided by the Digital Media Initiative that cut across existing research unit boundaries and was funded to initiate a specific activity over a limited time frame. Again, the development of more precise guidelines for strategic initiatives will be a task for the URSC in the coming months.

4.5 Recognition of Research Excellence versus Research Strength

There is currently a strong nexus between URC funding levels and recognition of research activity which is not that surprising given that the current model has essentially only one reward mechanism (i.e. increased funding as performance increases). Given that the number of staff in recognized research strengths would be much reduced compared to those in current research units this nexus could be accentuated in the short term; however, there is also an opportunity to breakdown this nexus if the entire strategy is managed well.

Conversely, an optimistic view is that the nexus may be broken by the fact there will be a number of excellent researchers who fall outside research strengths. This will only be true if we promote the right message via our policies and discussion paper. The implementation of some different forms (University wide and Faculty-based) of incentive and/or reward systems for research excellence may also to serve to ameliorate this perception.

4.6 Impact of Research on Other Areas of the University

A number of areas outside the “control” of the URC may have a significant impact on research performance and the morale of active researchers. It is beyond the scope of this paper to consider all these issues and areas.
However, long term, strategic change will require integration of research planning and management with management and policies in other areas of the University. An indicative list of these is:

- Recruitment, probation, promotion especially for, but not limited to, research-only staff.
- Matrix management and the definition of responsibility for career development.
- Infrastructure, especially IT, but also including library and other research resources.
- Study Leave and SLAG
- Levels of Support for Conference Attendance
- Workload models
- International partnerships
- Off-load teaching
- Faculty restructures
- Marketing and promotion of our research activities
- Faculty Budget model
- Capital Management Plan and Space
- Research Incentives for Individuals

Again, it is not possible to articulate all these relationships here in the discussion but many of these issues will be taken up in the subsequent discussion papers.