



## RESEARCH PLAN FOR 2009 TO 2012



## EXECUTIVE SUMMARY

The Research Plan details the research part of the University's Strategic Plan 2008 to 2012 providing context for research, faculty and centre operational plans.

The University, from its foundation, has placed priority on:

- Research of the highest academic quality judged in comparison to the best in the world and
- Making a difference in society through its research.

This plan systematically commits the University to continuing those two priorities, improving their delivery and being accountable internally and externally through rigorous measurement. The University continues to promote different futures for Australia by combining research from different disciplines and by researching in areas between traditional disciplines.

The University will:

- Improve research quality and impact, measuring improvement through measures in the Commonwealth Government's Excellence in Research for Australia (ERA) and a new rigorous University Analysis of Research Quality (UARQ)
- Have two broad fields of research in the top 100 in the world
- Expand research income by 50 per cent on 2007 levels
- Expand research publications by 20 per cent on 2007 levels
- Expand research higher degree enrolments by 20 per cent on 2007 levels
- Review and revise University strengths based on UARQ and ERA
- Appropriately focus funding on these strengths, developing this funding as rigorous specific comparisons of research become available through ERA
- Broadly mirror Commonwealth funding and requirements (especially activity-based costing)
- Anticipate full-cost of research funding for national competitive grants by means of an advance in the budget, thus investing in areas of strength
- Explicitly connect research with teaching through their common base in discovery and learning, acknowledging that the University will only succeed financially if it maintains and improves its research standing
- Make uniform workload principles that will ensure equity across staff, aiming to free staff time for research
- Hold relevant office holders in the University accountable for delivering research targets
- Implement plans to replace retiring research leaders, introducing new flexibility in attracting high quality staff
- Monitor and implement necessary organisational change to deliver research aims
- Invest in necessary buildings, infrastructure, equipment and compliance requirements to achieve research aims
- Confine research strengths to at most seven broad areas
- Improve the PhD experience resulting in higher retention rates and better skills for graduates
- Provide more scholarships and space for research students to support expansion of higher degree enrolments

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## 1 CONTEXT AND BACKGROUND

The purpose of the Research Plan is to advance research by providing a link from the Strategic Plan 2008 to 2012, as amended and expanded in February 2009, to the rolling three year Operational Plans in Research. These three linked plans inform and frame all the plans of the Faculties, Centres and Institutes. Whilst the Strategic Plan is focused on broad strategies and long-term targets and improvement, the Operational Plans are focused on specific actions and the short-term. The Research Plan provides more detail on the goals in the Strategic Plan whilst also providing a framework for the Operational Plans – mandating some directions, actions and measurements in the Operational Plans, but also enabling the Operational Plans to evolve as opportunities arise and institutional change is required by external circumstances. Each action in the Strategic Plan is deliberately repeated here, but details on the background, mechanism and measurement are given. More detailed aims and description are also included.

The Australian Universities Quality Agency, in its 2005 report, stated “AUQA recommends that La Trobe University ensure that all major research activities, centres and initiatives are brought within a single, comprehensive research strategy”. Although the 2008 to 2012 Strategic Plan implemented this recommendation in broad terms, the details of the implementation are found in this document.

Research is, and has always been, fundamental to La Trobe’s purpose as a higher education institution. Research at La Trobe is judged on its capacity to contribute to national innovation, either:

- Being of the highest intellectual quality, judged by recognised national and international standards such as Excellence in Research for Australia, or
- Contributing directly to solving problems of interest and importance to the nation, judged by the demand for the research and the effectiveness of the solutions.

The Research Plan linked to the Curriculum White-Paper and the broader educational mission of La Trobe through:

- A particular approach to the relationship between teaching and research which puts discovery and learning at the heart of both
- The requirement at appointment of teaching-and-research staff<sup>1</sup> who will be active in research, either fundamental or applied
- Promotions which are based on performance in both teaching and research, as assigned in workloads<sup>2</sup>
- Provision of opportunities in all degrees for research and/or research preparation<sup>3</sup>
- Higher-degrees-by-research graduates with the skills and preparation to lead national innovation through research or their other skills – including, but not limited to, preparing future university leaders
- The importance of research as a defining characteristic of the University and the use of research success and excitement in attracting students.

Research at La Trobe has been characterized by strong national and international performance in fundamental and applied research:

- Useful evidence on our strengths comes, for example, from the rankings published by the Times of London, 60 per cent of the scores for which are based on research (peer review and citations per staff member). In 2008, the University was ranked 15<sup>th</sup> in Australia and 242<sup>nd</sup> in the world.

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<sup>1</sup> Human Resources Manual requires staff at Level B and above to “undertake independent teaching and research in his or her discipline or related area”.

<sup>2</sup> The Promotions Policy is at <http://www.latrobe.edu.au/pc/manual/hrm-index.htm#p>

<sup>3</sup> Honours versions of degrees always provide this. The Curriculum White Paper Recommendation 1 includes “Inquiry/Research” as one of the shared La Trobe University graduate capabilities, to be defined in appropriate discipline or field-specific terms, and to be assessed against agreed standards of achievement.

- Significantly, in areas of significant research concentration, the University was generally ranked higher in the same rankings. The University was ranked 8<sup>th</sup> in Australia in Arts and Humanities and 86<sup>th</sup> in the world. In Social Sciences, the University was ranked 9<sup>th</sup> in Australia and 180<sup>th</sup> in the world. In Life Sciences and Biomedicine, the University was ranked 12<sup>th</sup> in Australia and 218<sup>th</sup> in the world. In Natural Sciences, the University was ranked 12<sup>th</sup> in Australia and 290<sup>th</sup> in the world.
- In each case above, the University secured the top ranking amongst its peers in the Innovative Research Universities Australia. These universities share a common background and a considerable degree of common research interests and approaches.
- In Life Sciences and Biomedicine, the University was ranked 4<sup>th</sup> amongst those without a medical faculty and ranked higher than 9 universities in Australia which have one. The University ranked first in 2008 National Health and Medical Research Council grants amongst all Universities without a medical faculty, 12<sup>th</sup> overall and ranked higher than 9 universities in Australia with a medical faculty.
- In ARC Funding for 2009, the University was among the top 15% of universities in the number of active grants administered in the Research Fields, Courses and Disciplines (RFCD) two digit codes, History and Archaeology and Studies in Human Society and in the top 30% in the number of active grants in the two digit RFCD codes Behavioural and Cognitive Sciences, Economics, Language and Culture, Law, Justice and Law Enforcement and Philosophy and Religion

The University has chosen to concentrate its research in areas of relevance to its distinctive mission:

- Particularly important parts of the mission for research are in the Act of Parliament emphasising “critical enquiry within the University and the general community”, “branches of learning”, “the advancement of knowledge and the pursuit of the benefits of its practical application ”
- La Trobe has two distinguished Faculties which emphasise critical enquiry and branches of learning (namely, Humanities and Social Sciences and Science, Technology and Engineering) and three distinguished Faculties which emphasise the pursuit of the benefits of its practical application (namely, Education, Health Sciences and Law and Management)
- Both sets of Faculties, however, have significant research endeavours which capture important research of the opposite emphasis (for example, Refugee Health in the Faculty of Humanities and Social Sciences and Cross-Cultural Communication in the Faculty of Education)
- Research at La Trobe is and has always been guided by core values of Responsibility, Relevance, Critical Inquiry, Integrity, Participation and Excellence
- La Trobe’s research from the beginning emphasised the free pursuit of knowledge, understanding and wisdom for their own sakes, espousing the value of intellectual enquiry to a broader community in Victoria than then existing universities. This orientation is present in all major research-intensive universities in the world and La Trobe will act decisively to preserve it
- La Trobe’s research continues to be driven by applications and relevance across a wide spectrum of fields. Applied research may require a combination of disciplines to ensure its success. Often, the contributions from individual disciplines may not be judged as strongly within a single discipline as they are when providing a solution to a problem of strong interest to the broader community
- The benefits of applying more than discipline can apply equally for fundamental research, as well as the benefits of proving and utilising connections between two disciplines
- La Trobe’s research has always had a strong emphasis on social as well as other benefits for the community. This continues to be the case. The emphasis in the Bradley Review on increasing participation in the Higher Education system offers benefits and challenges for La Trobe in research as well as in coursework education. Our communities, both regionally and in Melbourne, have lower rates of participation. La Trobe will continue to look for, and seize, opportunities to do research of particular relevance to these communities, ensuring as well that larger groups of talented students have access to higher degrees by research through offering greater access to coursework degrees.
- Equitable access to the University continues to be a prime orientation in both teaching and research. La Trobe will continue to be known for its determination to contribute to national capacity building through this orientation.

The Strategic Plan has ambitious aims for research at La Trobe. Research Income is to be raised by 2012 by 50% above the 2007 figure. Two areas at La Trobe are to be ranked in the top 100 in the world. Much change will need to

happen to make those ambitious plans work. This document gives a high level view of the changes needed and the mechanisms to implement the changes. Success will depend on the efforts of individual researchers, but this plan must give the appropriate policy settings and support from the University to encourage those who have the demonstrated capacity to improve our research and research income.

The plan provides a coherent framework for the linking of research quality and focus with the activities of research. Each of the research strengths underpins one or more of the Centres, Institutes or activities within Faculties. Many contribute to inter-disciplinary and cross-disciplinary research, indicating how highly the University is committed to such research. All are consistent with the twin aims of high quality research as expressed in the section on research strength and high impact research as expressed in the research foci section.<sup>4</sup>

## 2 RESEARCH QUALITY

Prominent Japanese engineer Taguchi<sup>5</sup> defines quality as “the loss imparted to society” of an activity: high quality imparts a small loss, or rather a large gain by viewing loss from the opposite direction.

Quality of research is not only about the intrinsic merits of the research (as judged by academic peers or a user of the results) but also the long-term effects of the research on increasing knowledge and its impact in society. The impact of research in society is significant enough to merit a separate section on research impact.

The relative cost of production of research would, according to a strict interpretation of Taguchi, reflect on its quality. Whilst the University does not adopt that strict interpretation, consideration of the best investment of necessarily constrained resources is a vital part of improving quality. Higher quality results when the priority on investment of internal resources – particularly those funded from the surplus - is to leverage external resources: the risk to the University and society is spread more widely, thus maximising the chance of wise decisions on the use of those resources.

Increasingly, assessment of research strengths will be a guide in concentrating internal resourcing to support research. They will be used both in evaluating funding from University surpluses to Centres, Institutes and Faculties. Thus the University will be able to leverage further strategic investment from surpluses to produce research that can compete internationally – both in areas where there are high demands on infrastructure and in areas where the main requirements are leading researchers. This further investment will be on top of the plans detailed in Section 2.1.3 and Section 10.

Given the complexity of measuring applied research – traditional measures such as quality of publication source, citations by academic peers, volume of refereed publications do not assess the impact on society, government or industry – measurement of strength at La Trobe will accommodate a variety of disciplinary, inter-disciplinary and multi-disciplinary approaches. Excellence in Research for Australia will be an important measure of success. Consistent external support for applied research will be another important measure.

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<sup>4</sup> The rest of the plan groups together aims of the Strategic Plan and other matters under Headings, beginning with Section 2 on Research Quality. In each of the sections, aims from the Strategic plan are given as Headings at the Second Level, beginning with Section 2.1 with imperative title “Expand Research Quality”. Aims from the Strategic Plan are subsections with contents giving Background, Mechanisms and Measurement in relation to each aim.

<sup>5</sup> See, for example, Taguchi, G (1987), SYSTEM OF EXPERIMENTAL DESIGN: ENGINEERING METHODS TO OPTIMIZE QUALITY AND MINIMIZE COSTS, UNIPUB/Kraus International Publications, White Plains, NY, Vol. 1.

## 2.1 EXPAND RESEARCH QUALITY

### *Background*

The Strategic Plan commits the University to developing its existing research strengths and its potential strengths in order to raise the quality, impact and volume of research activity, increase research income, and further enhance the international reputation of the University. This will also support its capacity to deliver high quality and relevant teaching. The University inhabits an increasingly competitive environment in Australia for research funding and support both for fundamental and applied research. Resources are stretched and cross-subsidisation of research by teaching is common. Strong indications are that the Government will require, using data from Excellence for Research in Australia (ERA), that Universities focus on research of high quality. The University will resist any pressures to focus only on disciplinary research that is suitable for evaluation by ERA. It will continue to focus on inter- and multi-disciplinary research where ERA (based on disciplines) will have greater difficulty. Further the University will focus on applied research of high quality. High quality staff are the key to producing research of high quality.

### *Mechanisms*

Quality experts Harrington and McNeallis say “If you can’t measure something, you can’t understand it. If you can’t understand it, you can’t control it. If you can’t control it, you can’t improve it.”<sup>6</sup> Whilst research is unlike manufacturing in many respects, the importance of measurement to improving quality is something they share. The University commits to measuring quality in as efficient and effective way possible.

University actions based on this follow.

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### 2.1.1 EXCELLENCE IN RESEARCH FOR AUSTRALIA (ERA) AND OTHER EXTERNAL REVIEW

The University will

- act to present its research in the best way for all external purposes including ERA. For ERA, this will involve careful consideration of the categorisation of research, careful consideration of the categorisation of staff and picking the best publications in research fields without regard to the concentration or otherwise of the work amongst particular members of staff. Selection will be made on the basis of expert review committees in relevant clusters of fields of research. For other external purposes, information selected will be rigorous and fair, making comparisons with other institutions in a way that compares like with like as far as possible and eschewing comparisons which confound causes. Authority for resolving any difficulties will rest with the Deputy Vice-Chancellor (Research) since fine-grained distinctions based on overall knowledge of the University will be necessary.
- use ERA measurements in the improvement of quality in particular fields of research, noting difficulties with interpretation where relevant
  - apply ERA in the analysis of inter- and multi-disciplinary research using the field provided by the ERA collection for this purpose.

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### 2.1.2 UNIVERSITY ANALYSIS OF RESEARCH QUALITY (UARQ)

The University will develop systems of quality measurement based on data that is collected for the Higher Education Research Data Collection, Higher Degree Research Load and Completions and from Scopus, the Citation Provider chosen by the Australian Research Council for use in the trial of ERA in 2009. Preliminary analysis on fields of research has been conducted. By 2010 the University will develop measures of the quality of applied research based on impact that it has made on the user group to which it is addressed. Work on these measures will consider measurement of significance of the work to the wider world, measurement of the success of the research in solving the problems of users and measurement of the practical application of the work in national innovation and advancement. Work on these measures will also consider how to gather data on the significance of the problems tackled by an applied researcher, how to use evidence from research sponsors (including quantum of funding, repeat requests and the success of the solutions or understanding derived) and how to gather information on practical application

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<sup>6</sup> Harrington H.J., McNeallis T. Mobilizing the Right Lean Metrics for Success. *Quality Digest*. 2006. May, Retrieved April 14, 2007. [http://www.qualitydigest.com/may06/articles/02\\_article.shtml](http://www.qualitydigest.com/may06/articles/02_article.shtml).

(commercialisation, patents, surveys of users of the research, surveys of the beneficiaries of the research). By 2010 the University will also have developed and applied measures of satisfaction from PhD students and from employers of PhD students. Prior to the first ERA reviews it has undertaken data analysis to make the best predictions on ERA.

Investment and budget, staff, infrastructure and compliance are also vital mechanisms to expand quality:

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### 2.1.3 INVESTMENT AND BUDGET

Following the Strategic Plan 2008 to 2012, the University made major changes to the budget system for 2009. The previous budget system was not transparent and many cross-subsidies were not evident. From 2009 onwards, income is distributed entirely to Faculties as earned, including Research Infrastructure Block Grant (RIBG), Institutional Grants Scheme (IGS) and Research Training Scheme (RTS) (although given fore-shadowed changes to RTS by the Commonwealth Government minor adjustments in RTS have remained in 2009). Central costs have been distributed on the basis of activity, albeit on an initially crude basis. This fundamental change prepares the University for the announced change to full-cost funding of competitive grants, provided that the University has activity based costing. Council had introduced a Research Investment Fund in 2006 aiming to seed external funding. In 2009 onwards this investment is combined with other research investments and funded after the surpluses from Faculty and other operations, before the overall University surplus is calculated. Some information on this investment in 2009 and the implementation of these plans for 2009-2011 are given in Section 10.

Investment in buildings is dealt with in Section 9.

Since the Government is committed to introduce full-cost funding for research, until the time that this is introduced the University will budget, from the surplus, to raise RIBG and IGS to a level closer to the full cost of funding for national competitive grants (40c for 2009). This funding will be conditional on the production of a budget for it by August for the next year at faculty level (with the budget in 2009, given timing, being revised by May 2009 to include description of this expenditure). Faculties are also responsible for documenting the research investment in RIBG, IGS and RTS at the level required for Commonwealth compliance with the conditions of grants.

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### 2.1.4 WORKFORCE AND WORKLOAD PLANNING

The University will introduce workforce planning to ensure that there are well developed plans within specified fields of research for necessary replacement of staff, including proposals for renewal of staff before leaders retire. These proposals will apply where the field of research is listed as strong, an emerging strength or is subject of a specific strategy in this plan. Later in this section are detailed proposals for, to be implemented by 2010,

- workload planning to allow current researchers more time on research consistent with the overall teaching and other requirements of the university
- measures to strengthen early- and mid-career researchers
- carefully targeted measures to attract high profile researchers from other institutions.

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### 2.1.5 COMPLIANCE

Any failure to comply with relevant legislation and codes of conduct carries with it risks of penalty (including losing the eligibility for grants) as well profound reputational risks. Accordingly, lack of compliance is classified as poor quality in research. To improve quality, the University will as part of regular five-yearly cycles introduce broad reviews on the compliance to the national code of conduct for responsible research, relevant codes and ethical principles in relation to animals, humans and gene manipulation. Such reviews will also include reviews of financial and people & culture systems, processes and practice that underpin research. Defects in compliance will be a first call on University budget for rectification.

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## 2.1.6 INFRASTRUCTURE

Infrastructure for research includes equipment, buildings, computing and research support. Large building and equipment projects, as well as major bids and seed funding for major bids, will continue to be supported from University budgets.

The University will continue to a major commitment to the development and implementation of e-Research, through the e-Research Office (established in early 2007). It will recognise that the influence of large data resources and powerful analysis increasingly affects every research discipline and theme. The data explosion and relatively sudden requirement for high performance computing has necessitated central co-ordination of bids, data management capability and policy. The University will continue to expand resources in computing, not just for specialist areas, but will build on opportunities for digital repositories such as the Trendall and Hellenic archives, subject to the availability of funding.

The University will also continue to recognise the importance of investment in infrastructure for research requiring expensive technology, aiming to develop external partnerships where-ever possible and to use schemes such as Linkage Infrastructure, Equipment and Facilities and the National Collaborative Research Infrastructure Strategy, or its successors.<sup>7</sup> The University cash contributions will, in general, be the minimum required to maximise the chances of success of external funding. The University will enhance research with modern technologies and methods and continue to exploit, develop and, where justified, increase external collaboration through bodies such as the Victorian Partnership for Advanced Computing, the Victorian e-Research Strategic Initiative, the Victorian Centre for Advanced Materials Manufacturing, the Australian Institute for Nuclear Science and Engineering and the Australian Synchrotron. There will be yearly reviews, conducted by the Research and Graduate Studies Committee, of the benefits of these investments, with a decision taken to increase or decrease investment for the next year, based on the results.

Concentration at the central level will not just be via selection of areas of research investment, but also by attempting to use limited internal investment to leverage maximum external grants, donations, contracts and research consultancies. Equipment and environment will be a priority in such investment, with greatest priority to investments which will align with research strengths or emerging research strengths and produce the greatest external financial investment. Contributions from University budgets, either from Central costs or from investment via surpluses, will not normally exceed external funding. University investment may be greater for donations that align with research strategy than for other external funding. Priority will be given to short-term seeding. Long-term subsidisation from Central budgets will only occur in the context of strategic planning approved through university planning, reviewed at least every five years and approved as part of the planning cycle.

Two reviews of research support practices outside the Division of Research will be implemented by 2012 with the focus on improving quality by refining systems, processes and practice to ensure efficiency and effectiveness, as well as documenting the experience of researchers and research managers.

### *Measurement*

The University will have succeeded if

- at least two areas or research at La Trobe are in 2012 can demonstrate using evidence from ERA or UARQ that they are in the top one hundred amongst universities in the world
- ERA analyses when available broadly conform with the predictions based on UARQ
- ERA analyses show the University can correctly claim that it is in the top 1/3<sup>rd</sup> of Australian universities in the disciplines nominated as strengths based on the preliminary UARQ in this plan and if not, nominated strengths have been changed based on ERA and/or UARQ
- a system of updating ERA analyses is in place in 2012 based on a successful implementation of the measures in the UARQ
- investment in strengths based on ERA has produced greater external income, greater publications and higher citations per publication within two years of investment

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<sup>7</sup> [See the Strategic Roadmap for Australian Research Infrastructure](#)

- UARQ introduces by 2010 measures of applied, multi-disciplinary and inter-disciplinary research that are not available through ERA and uses these measures to evaluate strengths, gaining acceptance from the University community (by survey) and externally (by discussions with the ARC and DIISR) for the validity of the approach
- by the end of 2010, the results of two reviews of substantial areas of compliance to national codes have shown compliance or alternatively plans to remedy compliance are in place
- budgets for the full cost of research advance (or the full cost once introduced by the Government) have been developed and implemented from 2009 onwards.

## 2.2 IDENTIFY AT MOST SEVEN AREAS OF RESEARCH STRENGTHS IN WHICH IT WISHES TO INVEST, CONFIRMING SELECTIONS THROUGH ERA AND UARQ

### *Background*

The University previously had fourteen announced strengths in research. These varied between disciplines, themes and centres without an explicit rationale or data to support the decisions taken on strengths or their number. The Australian Universities Quality Agency in its 2005 report said: “There are clear examples of research excellence throughout the University. What is less clear is the effectiveness of the strategic planning processes for research in coordinating and driving resourcing activities and outcomes across the University. Many major elements of the research activity are inadequately aligned, with the consequence that opportunities are not realised.” The Federal Government has been clear on the necessity of concentrating resources in areas of strength. For example, Federal Minister for Innovation, Industry, Science and Research, Kim Carr, said in April 2009:

“Australia simply isn’t big enough or rich enough to be good at everything. We must husband our resources and play to our strengths. The government’s ambition is to increase the number of research groups performing at world-class levels, as measured by international performance benchmarks.

We will further that objective by progressively addressing the gap in funding for the indirect costs of university research, subject to the capacity of future budgets. But in return, universities have to become more accountable. They must give us a better idea of what research really costs. They must meet specific performance targets, which will be developed in consultation with the sector.

And they must submit to the discipline of international comparison and competition. That’s why Excellence in Research for Australia is so important. It will guarantee research standards and performance by measuring our achievements against the best in the world. It will ultimately be used to plan future investments in research and research training. It will challenge universities to look unblinkingly at their own capabilities and performance.”<sup>8</sup>

### *Mechanism*

The University adopts the broad position of the Federal Government in selecting and investing in areas of research strength, whilst adding UARQ to the data available for selection of strengths. That is, whilst continuing to highly value and reward the work of single, outstanding researchers, the selections of fields of research in which the University is strong will be guided by data. Preliminary data analysis shows that National Competitive Grant Income is the best predictor (across two digit fields of research) of comparative performance with other universities in Australia (measured by subject-specific citations per paper in the ERA chosen provider Scopus). Accordingly, the University, as a means of investing in areas of research strength, will in its budgets give an advance on full-cost funding of National Competitive Grant income. As further data becomes available and, in particular after ERA has been implemented in 2010, further concentration of investment in areas of strength will occur.

The University has made a preliminary identification of research strengths using the following principles. The principles, which will continue to apply, are that Areas of Research Strengths:

- Are broadly descriptive rather than defined only by ARC Clusters or ABS Fields of Research (FoRs)

<sup>8</sup> <http://minister.innovation.gov.au/Carr/Pages/ADDRESSATVICTORIAUNIVERSITY-Launchof.aspx>

- Specify the encompassed 2 digit or 4 digit FoRs in which there is strength with decisions based on evidence and the application of a transparent rule
- Specify, where relevant, multi-disciplinary and inter-disciplinary research encompassed, defining this, for example, by reference to large research programs with external evaluation
- Specify, where relevant, applied research encompassed, defining this, for example, by reference to significant and consistent research on problems or themes of demonstrated interest and importance in the wider world (using defined measures of quality that can be substantiated prior to the UARQ measures becoming available)
- Specify the Centres, Institutes and Faculties which contribute to the strength
- Encompass fundamental research which is demonstrated as of high quality internationally and in the top third of Universities in Australia, using ERA (predictions prior to data being released) and UARQ
- Encompass applied research for which evidence of high quality is produced and accepted, such as ERA where relevant and UARQ
- Attract significant national competitive or other research funding
- Attract significant numbers of higher degree research students
- Adopt mechanisms to ensure high-quality degrees are completed in minimum possible time
- Attract externally-funded research fellows
- Cluster around a number of FoRs, applied research and multi- and inter-disciplinary research that have overlaps and common themes
- Ensure no two research strengths have the same 2- or 4- digit FoRs (including a 2 digit FoR in one research strength with a 4-digit FoR in another strength) nor the same areas of multi- or inter-disciplinary research nor the same areas of applied research.

As more data becomes available the University will revise the research strengths, at least on a five-yearly basis. Analysis will be produced using ERA predictions or updates and the UARQ on a yearly basis – responsibility for that analysis will centre on the Division of Research Services who will act in co-operation with student and bibliometric information services available.

The University will monitor the effectiveness of its organisational structures in focusing research resources, including academic's time, in areas of strength adopting changes or additions as would improve strengths. This will take place at the latest, within one year of the release of results from ERA. As the funding consequences and opportunities of ERA become known, University budget processes have been changed to broadly mirror those introduced by the Government ensuring that

- new external funding opportunities are seized and
- any concentration of university support for research which will optimise block grant funding is adopted.

As confidence in the definition of strength grows, investment from surpluses (see Section 10) will be increasingly, but not exclusively, focused on areas of strength, areas of emerging strength or approved plans to develop new areas of strength.

### *Measurement*

The University will have been successful if

- as ERA and other defined measures in UARQ become available (presumably at the latest by 2012) the initial identified seven areas of research strength have been
  - validated and
  - the encompassed FoRs, multi-disciplinary, inter-disciplinary and applied research have been validated
- or alternatively strengths that cannot demonstrate their excellence have been eliminated from the list or alternatively they have been refined to exclude FoRs
- at least two key areas at the two or four digit FoR level are identifiable as in the top 100 in the world by measures that are consistent with those in ERA and UARQ and available on an international basis.

## 2.3 DEVISE AND IMPLEMENT A TRANSPARENT MECHANISM FOR RECOGNISING RESEARCH OUTPUT AND ACTIVITY IN WORKLOADS

### *Background*

All Faculties have mechanisms for assigning workloads, principles which are framed in the Enterprise Bargaining Agreement. The way in which research output and activity is recognised does not follow uniform principles.

### *Mechanism*

The University will conduct a review of workload assignment in 2009 with a view to ensuring uniform principles are adopted across the University. These principles will ensure that active and productive researchers get appropriate recognition in their workloads. This will result in a realignment of current workloads so that active and productive researchers get more recognition of their work in assigning teaching and other duties. The review will produce workload models which will be applied in every Faculty. It will take account of existing practice in each Faculty and their specific needs and aims. The workload models will be a key tool in ensuring active and productive researchers are retained at the University. The workload models will be implemented consistent with University obligations under the Enterprise Bargaining Agreement.

### *Measurement*

The University will have succeeded if the review in 2009 permits active and productive researchers more time for their research, without compromising quality of teaching and learning. Quantitative measures of this will need to be defined and evaluated following the review in 2009 (consistent with obligations under the Enterprise Bargain), with success in 2012 depending on improvement in the measures introduced.

## 2.4 NOMINATE AND IN TIME SUPPORT EMERGING AREAS OF RESEARCH STRENGTH

### *Background*

The University is facing retirement of a large proportion of its academic workforce in the next 10 years. Existing areas of research strength are built around the interests of our academic staff. It would be unwise, perhaps impossible, to continue exactly the same areas of research strength in future.

### *Mechanism*

Each Faculty may nominate one area of emerging research strength for each 150 academic staff members, with at least one nomination available from each Faculty. Faculties will be encouraged to join together in nominating emerging strengths jointly because this will spread the opportunity for renewal more broadly. Once full-cost funding for national competitive grants has been introduced by the government, and rules for funding related to ERA are announced, the current budget allocation for advance on full-cost funding for research will be eliminated. The University will then seek to mirror ERA funding for emerging strengths from the surplus instead of the full-cost advance. This funding will be available for three years, by which time the emerging strength should have become a strength or merged with an existing strength.

### *Measurement*

The University will have succeeded if emerging strengths are identified by the end of 2010 and documented in the same as for strengths, setting goals to become an area of research strength within three years.

## 2.5 LEVERAGE SUPPORT FOR EARLY- AND MID-CAREER ACADEMIC STAFF THROUGH COLLABORATION WITH STAFF WITH ESTABLISHED RESEARCH RECORDS AND AWARDS

### *Background*

The University is facing retirement of many of its distinguished researchers in the next 10 years. These people have been instrumental in the University's research success, not only through their acclaimed research endeavours but also as the public face of the University and a major source of its reputation, thereby attracting and encouraging talent from all over the world. Even in academic areas where solitary scholarship has been the norm, the star researcher usually sets the standards for other researchers and provides a role model to which research students and staff members aspire. As the University financial position is secured through the implementation of the Strategic Plan,

opportunities will arise to appoint new staff. Boosting their ability to research at the highest quality is vital to the future of the University.

### *Mechanism*

The University will create incentives for leading researchers to mentor younger researchers through management of workloads. Deans will be responsible for organising appropriate systems to identify leading researchers and for adapting their local (and University when developed) workload model to mandate help by leading researchers to early- and mid-career researchers. Mentors will be expected to help early- and mid-career researchers with their research, to assist them with identifying and securing funding and where possible to engage in joint research. All early- and mid-career researchers will be assigned a mentor for this purpose – this will include all new appointees from 2009 who are up to 10 years after their PhD. The mentor will, as appropriate, liaise with the supervisor in performance development and workload management.

The La Trobe University Excellence in Research Awards (LTUERA) will be introduced to provide high quality Early Career Researchers (ECRs) with recognition for their achievement and with support to enhance their further career development. There will be two levels of award for ECRs: one for 1-7 years post-doctoral staff and the other for 7-15 years post-doctoral staff. Researchers from all disciplines within the University are eligible, but there will be a strong focus on supporting applicants from areas of research strength.

The objectives of the La Trobe University Excellence in Research Awards (LTUERA) are:

- To recognise Early Career Researchers who show clear evidence of high research capacity; and
- To support, on a competitive basis, staff to undertake travel or other programs to enhance their research careers;

The award will include personal funds (\$2000) in recognition of the excellence of the applicant as well as funds to support (\$3000-5000) for a career development program, for example a research visit trip to a top national or international laboratory, a conference at which the candidate's work will be presented, or a leadership course.

One award for 1-7 year award ECR (Dean's award, funded by each Faculty) and four for 7-15 year ECR (Deputy ViceCR/VC's awards, funded by the Centre) will be offered each year.

### *Measurement*

The University will have succeeded if each Dean accountable to the Deputy Vice-Chancellor (Research) has demonstrated by 2010, as part of the yearly performance review, the identification of leading researchers as mentors, assigned appropriate mentees and can demonstrate that mentors have led to research and funding success for mentees. Further all teaching-and-research or research only staff from 2009 onwards will have been assigned a mentor. The University will have succeeded with the LTU ERA program if all faculties have nominated awardees who have been selected by the University in each year from 2009 and there is documented evidence from the awardees that the program has helped establish their careers.

## 2.6 ESTABLISH A MECHANISM TO APPOINT LEADING RESEARCHERS WITH MORE FLEXIBLE CONDITIONS OF APPOINTMENT

### *Background*

The key to success in research is building a network of leading researchers who inspire others. In steady state this network will be a balanced group of staff whose careers have grown at La Trobe with injection of leaders from outside to professorial appointments. Some of these professors grow to become international leaders in their field. The relative value of these leaders contributing to quality is disproportionate. The circumstances of the University's age profile for academic staff means that these star leaders will retire within the next five to ten years. In order to optimise quality, in addition to mentoring mid- and early-career researchers, it will be necessary to appoint a limited number of leading researchers from elsewhere. Salary and title flexibility, as well as strategic fit with La Trobe, will be necessary to attract them.

### *Mechanism*

The University has commenced two initiatives already. Professor Graeme Clarke FRS FAA AC, pioneer of the bionic ear and the first person to successfully implant bionic ear in a deaf person, was appointed as the first University Distinguished Professor by Council in December 2008. Professor Clarke has a strategic fit with the research strengths of Human Communication and Health and Society, as well as the new cross-disciplinary research Institute of Social Participation. Professor Clarke has been instrumental in building the Graeme Clark Research Centre for Bionic Ear and Neurosensory Research, a development which ensures mentoring of a wide variety of staff and students. The Centre was approved by Academic Board in March 2009. Council, following its request in December 2009, will receive a proposal to create general conditions for the award of the title of Distinguished Professor, which in general will require distinction at the same level as Fellowship of the Royal Society of London (eg Fellowship of British Academy or Fellowship of the American Academy of Arts and Sciences).

The Biosciences Research Centre is a joint venture between the Department of Primary Industries (DPI) in Victoria and the University. It is described more fully under the research strength Agribiosciences and the Environment, under the Biosciences Research Centre entry under Centres and Institutes and under the entry under Infrastructure. A key feature of the agreements between DPI and the University is the creation of 3 professorial positions by the University in the areas of Systems Biology, Plant Biology and Climate Change and Adaptation. Each of these positions will be paid at levels up to that for Laureate Fellow and they will be expected to apply for Laureate Fellowships. This system of strategic decision to appoint at levels above the professorial standard will be extended to other parts of the University as strategic opportunities arise. These positions will be more than justified by the enhancement of research quality they induce, but as full-cost funding of competitive research is introduced, there will be significant financial advantages as well.

Flexible conditions should include non-standard terms in the assignment of workloads, for example a defined and larger than standard fraction of workload assigned to research, bonuses in pay for research leaders at any level, and conditions at appointment for research support in terms of infrastructure, supporting positions and other variations in standard appointments. Where there are variations in any of these areas which do not lie in the delegation of the Dean or do not follow standard university practice, the Vice-Chancellor will approve the recommendations as Chair of a Committee consisting of the Dean and the Deputy Vice-Chancellor (Research).

All such flexible conditions will take due account of Enterprise Agreements and relevant policies and practice of the University. The University will, in this context, seek to make continuing appointments to research-only positions, subject to length of service, level of appointment, performance, financial viability and external constraints.

## Measurement

The University will have succeeded if Council has adopted conditions in 2009 for the award of the title of Distinguished Professor, and at least eight research leaders of renowned quality have been appointed with flexible conditions by 2012.

### 3 SEVEN AREAS OF RESEARCH STRENGTH IDENTIFIED

Preliminary identifications follow from the data, modelling and analysis conducted. They have been chosen to be conservative in that relevant Faculty Associate Deans have gathered data that gives them confidence that they will meet the criteria enunciated in the principles for research. As more data becomes available, the strengths will be reviewed.<sup>9</sup>

#### 3.1 AGRIBIOSCIENCE AND THE ENVIRONMENT

- Encompasses research in physical and biotic components of the natural and managed environment: includes parts of the traditional disciplines of botany, zoology and microbiology and their applications in geospace, agricultural sciences and environmental management and ecology
- Affiliated Centres and Institutes include the Biosciences Research Centre, the Institute of Social and Environmental Sustainability, the Cooperative Research Centres for National Plant Biosecurity and Molecular Plant Breeding, the Murray Darling Freshwater Research Centre, and the Centres for Applied Alpine Ecology and Sustainable Regional Communities
- Contributions from the Faculty of Science, Technology and Engineering and the Faculty of Law and Management
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 0608 Zoology, 0607 Plant Biology, 0503 Soil Science
- Major applied research involves the commercialisation of biotechnology with partners including the GRDC, DPI, Hort Aust Inc, Advanta and Florigene
- Major multi- and inter-disciplinary research encompasses the interaction of environmental science with policy and economics for sustainability, climate-change adaptation and resilience, focused through the Institute for Social and Environmental Sustainability
- The partnership with the Victorian Department of Primary Industries (DPI) is an important part of the applied and fundamental research:
  - La Trobe is in the process of appointing 3 distinguished research leaders in Systems Biology, Plant Biology and Ecosystem Sustainability and Adaptation
  - DPI and the University have appointed 15 distinguished scientists and research leaders to positions which are 50% in DPI and 50% in the University
  - the State Government and the University have committed \$230 million for building and equipment.

<sup>9</sup> Until ERA journal assignments are made, it would not be worth refining this data, because the analysis is dependent on those assignments – the consultation version from June 2008 has been used in most cases. ERA will provide validation but when the University is ready for ERA, the analysis will be repeated.

<sup>10</sup> The data for the preliminary UARQ included external Scopus (the chosen provider for the ERA trial) information on publications and citations across all Australian universities from 2003 to 2008 in each subject as well as University Higher Education Research Data Collection based information on higher degree research load and completions, total research income and national competitive grant income choosing from data for 2002 to 2007. Data and the decision rule will be revisited after ERA data collection is complete – this will alter the internal publications and may refine classification of income.

### 3.2 HEALTH AND SOCIETY

- Including diverse and vibrant research aiming to achieve and maintain good health in Australia, particularly studying the interaction of health with society;
- Affiliated Centres and Institutes include the Institute of Social Participation, National Stroke Research Institute, Cooperative Research Centre in Aboriginal Health, Research Centres in Sex, Health and Society, Mother and Child Health, Musculoskeletal Research, Australian Centre for Evidence Based Aged Care, and Australian Institute for Primary Care
- Contributions from the Faculty of Health Sciences and the Faculty of Humanities and Social Sciences
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 1103 Clinical Science, 1110 Nursing, 1117 Public Health and Health Services
- Major applied research programs include state of the art movement analysis, evidence-based policy and health services development, international collaborations in public and social research and the Cochrane Review Group in Health Communication and Participation.
- Major multi- and inter-disciplinary research includes overcoming the obstacles to participation in society for groups such as the aged and those with disabilities, focused through the Institute for Social Participation

### 3.3 HUMAN BEHAVIOUR AND THOUGHT

- Including research in various parts of psychology, philosophy, mathematical sciences and computer science
- Affiliated Centres and Institutes include the ARC Centre of Excellence for Mathematics and Statistics of Complex Systems, the Australian Mathematical Sciences Institute, the Olga Tennison Autism Research Centre and the Graeme Clark Research Centre for Bionic Ear and NeuroSensory Research
- Contributions from the Faculties of Education, Humanities and Social Sciences and Science, Technology and Engineering
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 1701 Psychology and 2203 Philosophy
- Major applied research programs include studies of memory and attention in children with language impairment or autism, evaluation of prevention and treatment interventions for body image and eating disorders and Bushfire Cooperative Research Centre Projects, as well as facilities for remote sensing of space weather, efficient databases, secure broadband internet protocols, and global standards in aviation, voice and speech recognition.
- Major multi- and inter-disciplinary research include participation in the Early Language in Australia Study, involving NHMRC- and ARC- funded longitudinal studies of language development, language disorders, eating patterns, obesity and body image in a very large cohort of children in greater Melbourne, as well as mathematics and statistics of complex systems, applications of statistics in medical and life sciences
- Evidence of strength includes over \$6m of total research income in 2005-2007 and 3 memberships of Australian and British learned academies.

### 3.4 HUMAN COMMUNICATION

- Including research from linguistics (including sign language research), speech pathology, deaf studies, English, cinema studies, and media studies
- Affiliated centres and institutes include the Research Centre for Linguistic Typology and the National Institute for Deaf Studies and Sign Language
- Contributions from the Faculties of Humanities and Social Sciences, Education, Health Sciences, and Science, Technology, and Engineering
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 2001 Communication and Media Studies, 2004 Linguistics and 2005 Literary Studies
- Major applied research includes work carried out on speech pathology at the La Trobe Communication Clinic, work with the National Film and Sound Archive, the ABC television archive, the Australian Centre for the Moving Image and the Melbourne Museum, and work carried out on language teaching and translation.
- Major multi- and inter-disciplinary research includes sociolinguistics, psycholinguistics, and anthropological linguistics.

- Evidence of strength includes \$2.5 million in research income 2005-2007 and five researchers elected Fellows of the Australian Academy of Humanities and one elected a member of the Australian Academy of Social Sciences

### 3.5 HUMAN SOCIETY AND ORGANISATION

- Research involving society and its organisation and the way organisations impact on society
- Affiliated research organisations include the Institute for Human Security, the Refugee Health Research Centre, the Innovative Universities European Union Centre, the Centre for Dialogue, Phillipine Australia Study Centre and Thesis Eleven Centre for Critical Enquiry
- Contributions from the Faculty of Law and Management and the Faculty of Humanities and Social Sciences
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 1402 Applied Economics, 1606 Political Science, 1608 Sociology
- Major applied research and multi-disciplinary programs include research to investigate ways of enhancing human security, to identify and ameliorate the effects of forced migration, and to promote dialogue between cultures and peoples.
- Evidence of strength includes six sociologists and political scientists elected to the Australian Academy of Social Sciences.

### 3.6 MOLECULAR SCIENCE

- Science at the molecular scale, including nanoscale and complex systems, using a multidisciplinary approach that combines research in many traditional research disciplines including parts of biochemistry, chemistry and physics
- Affiliated organisations include the La Trobe Institute for Molecular Science (LIMS), ARC Centre of Excellence for Coherent X-Ray Science, Co-operative Research Centre for Biomarker Translation, Centre for Materials and Surface Science, the Centre for Technology Infusion, and the Australian Synchrotron;
- Contributions from the Faculty of Science, Technology and Engineering and the Faculty of Health Sciences
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 02 Physical Sciences, 0601 Biochemistry & Cell Biology
- Major applied research programs include commercialisation of biotechnology with Hexima Ltd, AdAlta Pty Ltd and Sensologix Inc, and analysis of anti-cancer agents and antimalarials
- Major multi- and inter-disciplinary research includes combinations of biochemistry, genetics, chemistry and physics to image biological systems and to determine the structure of biological molecules
- Evidence of strength includes over \$23m in total research income 2005-2007 including NIH and Bill and Melinda Gates funding as well as an NHMRC Australia Fellow.

### 3.7 STUDIES OF THE PAST

- The archaeology of complex societies in the ancient and modern worlds, the archaeology of Australia and Oceania (both ancient and modern), the social and political contexts of the practice of archaeology as well as its methods and theories. The study of Australian and American history is particularly distinguished. Approaches include transnational history with a focus on the study of settler colonialisms, labour and gender history
- Contributions from the Faculty of Humanities and Social Sciences
- The following encompassed fields of research demonstrated strength in a preliminary UARQ<sup>10</sup>: 2101 Archaeology and 2103 Historical Studies
- Evidence of strength includes total research income in 2005-2007 of \$3.3 million and externally funded research fellowships: 1 Australian Professorial Fellowship, 2 Senior Research Fellowships, 1 Australian Research Fellowship and 11 Postdoctoral Fellowships.
- Further evidence includes the fact that 9 researchers in Archaeology and History have been elected Fellows of the Academies of Humanities and Social Sciences in Australia.

## 4 RESEARCH IMPACT

In general terms, the University will focus on strategically chosen areas of research, generally decided by the missions of Centres, Institutes and Faculties. The University will maintain a balance between fundamental and applied research (preferring fundamental research which leads to applications or applied research which requires clarification of the fundamentals). It will also maintain a balance between research in traditional disciplines, with research that spans disciplines or lies between them. This commitment to balance will acknowledge the power of opportunities presented through the available funding (both for specific Centres, Institutes, programs or projects), but will maintain the commitment through funding regimes that might preference fundamental over applied research or single-disciplinary over cross-disciplinary research. That commitment will require mobilisation of internal resources through cross-subsidy on occasions.

### 4.1 EXPAND RESEARCH IMPACT

#### *Background*

The University has a proud history of doing research which leads to practical benefits for society. Not only has this occurred through Faculties for which their education and research missions make this natural, but also in Humanities and Social Sciences and Science, Technology and Engineering where large parts of the Faculty contribute to fundamental research at the highest level.

#### *Mechanism*

Funding of cross-disciplinary Institutes will occur at the level of \$300,000 per year for the first three years. Their missions will be to join together researchers from a wide variety of disciplines to engage in research aimed at specific problems for which demand is clearly established and approved through the Academic Board. Centre, Institute and Faculty plans will address applied research and the mixing of disciplines to tackle themes of established utility to the broader community. Research Services will support the Institutes to target funding opportunities from competitive and industry sources and to assist in creating external collaborative opportunities.

#### *Measurement*

UARQ will measure the impact over 2010, 2011 and 2012. Impact should increase over that time. If it has not, the University will seek the reasons and develop plans to remedy that.

### 4.2 DEVELOP MECHANISMS TO FACILITATE CROSS-DISCIPLINARY APPROACHES TO RESEARCH, INCLUDING THE ESTABLISHMENT OF AT LEAST THREE NEW CROSS-FACULTY RESEARCH INSTITUTES.

#### *Background*

The University has tended to focus research within one faculty. There have not been large scale conscious efforts to bring researchers together across faculties.

#### *Mechanism*

Deans will have performance targets set by the Deputy Vice Chancellor (Research) for which they will be held accountable as part of their annual performance assessment. Four cross-faculty, cross-disciplinary Institutes were approved by the Academic Board in March 2009. Their operations will commence in 2009 according to plans approved by planning and resources committee. They are:

- **Institute for Human Security** The U.N. Commission on Human Security has defined it "as far more than the absence of violent conflict. It encompasses human rights, good governance and access to economic opportunity, education and health care." The Institute for Human Security is a University wide Institute, centred in the Faculty of Humanities and Social Sciences, which builds on existing research strength in the university. Its activities will promote the broad aims inherent in the UN definition. The existing Centres for Refugee Health and Dialogue, and the South Asia Research Facility are core affiliates of the Institute, but membership is open to all academic staff whose research fits under the rubric of human security, embracing a variety of non-traditional areas of security. The Institute builds on strengths in international health; food

security; new threats to global security; good governance; population movements etc. and works closely with other areas in the University around sustainability and climate change.

- **Institute for Molecular Science (LIMS)** La Trobe has established itself as a world-class research leader in the areas of molecular science, biotechnology and nanotechnology, as documented in the decision of the Federal Government to fund LIMS with \$64.1 million in the 2009-19 budget. The La Trobe Institute for Molecular Sciences (LIMS), along with partners in the broader Northern Melbourne Science Precinct, is training the next generation of scientists with skills to facilitate the development of a robust biotechnology industry. LIMS supports, expands and extends the teaching and research work of the School of Molecular Sciences. Different disciplines (Biochemistry, Chemistry, Genetics, Plant Biology, Physiology, Physics, Molecular Archaeology and Health Sciences) intermingle in shared work-space to achieve aims that would not be possible in traditional academic settings. Postgraduate and postdoctoral scientists work in an environment in which basic research findings are pursued, but also successfully translated into commercial products, such as therapeutic and diagnostic reagents for the treatment of cancer and autoimmune disease. Acting as a hub, it provides infrastructure for collaborative projects involving partners that include the CRCs for Biomarker Translation and Cancer Therapeutics, the Victorian AgriBioscience Centre, and the Biosciences Research Institute.
- **Institute for Social and Environmental Sustainability** Sustainable development is defined in the Report of the Brundtland Commission (1987) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This is a noble goal to which to aspire but one that has proven difficult, historically to achieve. Globalization, technological and economic development have increased expectations of enhanced quality and length of life at the same time that pressures caused by population, climate change and increasing global affluence threaten sustainability. The Institute for Social and Environmental Sustainability builds on existing research strengths in the University. Its activities will promote multidisciplinary research and multi-disciplinary business, policy and public sector approaches aimed at achieving sustainable development. Research topics of the Institute include, but are not limited to:
  - Social and environmental sustainability: Corporate social responsibility, sustainability reporting, social and environmental accounting, sustainability education, sustainable tourism, sustainable consumerism, responsible marketing, carbon markets, risk management.
  - Environmental sustainability: Pollution prevention and abatement, biodiversity conservation, sustainable natural resource management (including: water use, waste water, energy efficiency, renewable energy technologies), transport, climate change, sustainable agriculture, carbon trading, environmental management systems.
  - Social sustainability: Living standards, fair land acquisition, health and safety of workers and communities, human rights, equal opportunities, immigration, refugee populations, cultural relations, aged care, access to key services (such as health care and education), working conditions in the MNC supply chain, disease prevention.
- **Institute for Social Participation** Ageing, sensory impairment, intellectual or functional disability indeed any deviation from the ‘norm’ can result in individuals being excluded from their human right to social participation. La Trobe University has recognised research strengths in ageing, hearing and sight impairment; intellectual disability and human rights and this Institute will support cooperation and consolidation of effort and output. While individual Centres and researchers will continue working to their strengths the Institute will enable interdisciplinary research and make a significant contribution to knowledge, policy and practice in maximising social participation for individuals and groups who are at risk of social exclusion. It will also further enable national and international collaborations/affiliations in the area of social participation. Centres initially affiliated with the Institute of Social Participation are Australian Centre for Evidence Based Aged Care, the Graeme Clark Centre for Bionic Ear and Neurosensory Research, the John Richards Initiative, and the Lincoln Centre for Research on Ageing.

### *Measurement*

The targets for Deans will be negotiated with each Dean on the basis of existing cross-disciplinary research and the opportunities for more. They will be objectively measurable. The University will have succeeded if the Deans meet targets as agreed. The Institutes will be evaluated for their performance against plans annually – evaluation will use all publications and income connected to the Institute. This evaluation will be in parallel to evaluation of Centres and

Faculties which contribute and resources. A baseline for funding, quality and impact of research without the Institute will be established with the Dean and the Director in 2009. The University will have succeeded if results show that the Institute has been able to add substantial research and research funding that would not otherwise have been accessible to Faculties and Centres acting on their own, and that the Institutes have added to the quality and impact of research that would otherwise have been achieved.<sup>11</sup>

#### 4.3 ESTABLISH A SEARCHABLE DATABASE OF RESEARCH EXPERTISE AND PROMOTE OPEN ACCESS REPOSITORIES

##### *Mechanism*

The University will establish a searchable database of research expertise to facilitate cross-disciplinary research links, make resources available to the wider community and enable potential students to identify areas of current research and supervision. The database will be developed by 2009 and published on the web in 2011. It will be established taking account of best practice in Australia in respect of areas of research, publications of staff members and their connections. The University will promote its open access repository by developing a web-based system for lodging *post-prints* (the version of a publication immediately before it becomes subject to any copyright agreement) and enabling automatic capture of this version for the Higher Education Research Data Collection. A policy will mandate use of this system.

##### *Measurement*

The University will have succeeded if achievement of the database in 2011 is the initial target. Measurement of web hits internally and externally will be conducted through those responsible for such analysis. This data will be collected and evaluated in 2011 and 2012. Planning for improvements will depend on this analysis.

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<sup>11</sup> Logically, therefore, Institutes will not receive funding directly based on publications and income on a formula basis. They will continue to be funded from the University surplus until their size dictates consideration of alternatives, in the first instance \$5 million or more of research funding.

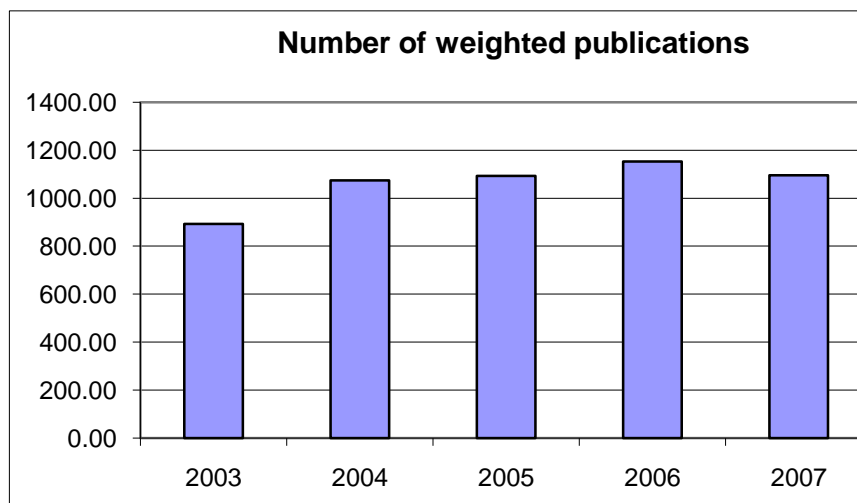
## 5 RESEARCH PUBLICATIONS AND INCOME

### 5.1 INCREASE THE NUMBER OF RESEARCH PUBLICATIONS AND AMOUNT OF RESEARCH INCOME

#### *Background*

The University publication numbers have been static for some time, see Figure 1. Greater research activity from these plans should result in greater publications, especially in high quality outlets and attracting high citations. Figures in this section come from the Higher Education Research Data Collection (HERDC).

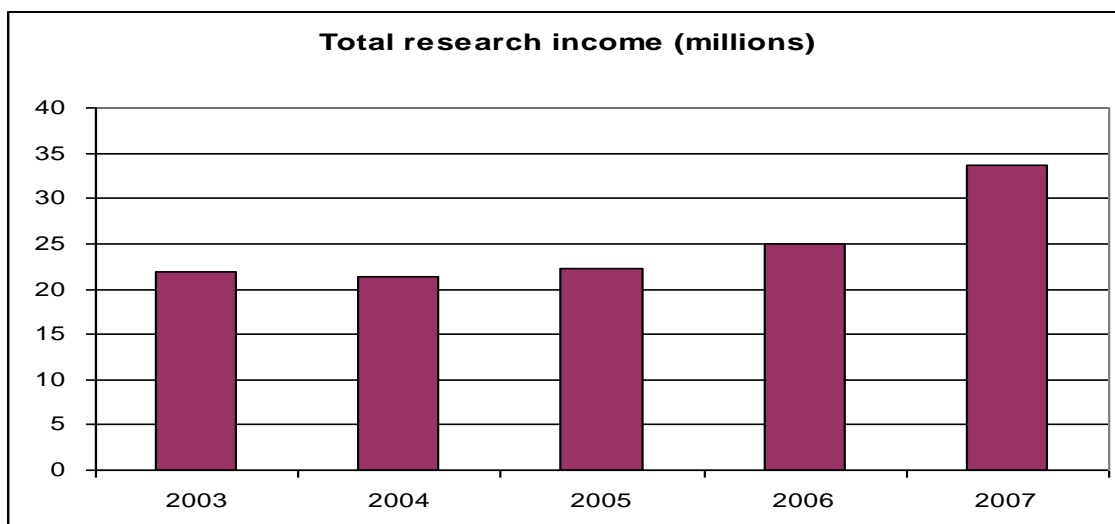
**Figure 1 Publications 2003 to 2007**



Given that some parts of the University have very strong and growing research publications increasing rapidly, this indicates that careful targeting of resources, management of workloads and planned renewal of staffing can produce both higher quality and higher volume.

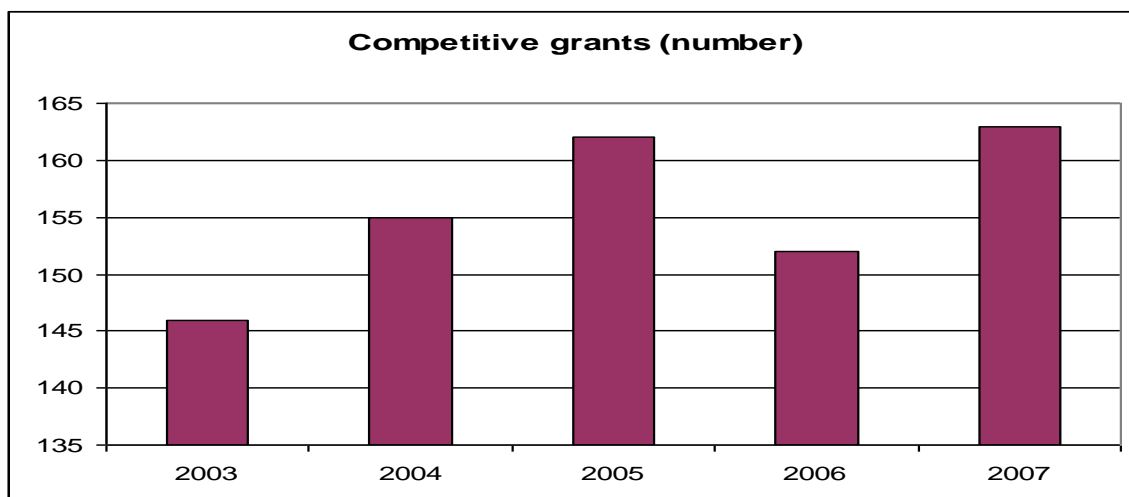
Research income was largely stable between 2003 and 2006 with a rapid jump in 2007 owing largely to the identification of previously unreported income. Figure 2 shows this.

**Figure 2 Total Research Income (HERDC Cat 1-4) 2003 to 2007**



The rest of the sector has shown much greater growth in total research income over that period as seen from the HERDC published data. Furthermore numbers of competitive grants have been volatile. Figure 3 shows this.

**Figure 3 Numbers of National Competitive Grants (HERDC Cat 1) 2003 to 2007**



The Federal Minister for Innovation, Industry, Science and Research has recently committed to meeting the full cost of research for national competitive grants in the longer term. It is vital that the University finds ways to seize the additional funding opportunities and flexibility that this will permit – fully funding competitive research will permit the lessening of cross-subsidisation of research from teaching and maximise the opportunities to use surpluses to invest in the balances to which the section on Research Focus commits the University.

### *Mechanism*

All of the plans in other sections on Quality, Focus, Higher Degree Students and Infrastructure are designed not only to raise quality but also research activity. That research activity will require external funding and must result in publications. The University will aid this by improving support in application processes and providing mentoring and training in publication writing. However, much of the achievement of goals will be dependent on careful supervision at local level and the role of the University is to set targets at the Faculty level which are consistent with overall goals. As documented in the section on cross-disciplinary and cross-Faculty Institutes, publications and research income of those Institutes will be attributed across the participating Faculties. Therefore the faculty targets should add to the overall University target.<sup>12</sup> The Deans will be held accountable to the Deputy Vice Chancellor Research, as part of their annual performance review, for meeting agreed publication and income targets<sup>13</sup>.

<sup>12</sup> There is one caveat: because of central funding of the Biosciences Research Centre, publications and income of jointly appointed Department of Primary Industries staff and some for the special professors will be attributed to a central source. The Deputy Vice-Chancellor (Research) will be accountable for meeting those targets.

<sup>13</sup> These targets will generally be set to take into account the number of staff in the Faculty. As full-cost funding of competitive grants occurs, competitive grants will attract substantially more infrastructure funding so targets will be set both for national competitive grants, Category 1, and also for Categories 2 to 4. As ERA and UARQ makes quality information available, agreed targets on quality of publications will also be set.

### *Measurement*

The University will have succeeded if weighted publication numbers (both globally and by staff member) have increased by 2012 by 20% over the number in 2007 and if total research income (HERDC Category 1 to 4) has increased by 2012 by 50% over the total in 2007. Note that these targets, and the progress toward them, will not be able to be assessed until June in the year of the data because that is the date of HERDC collection. Planning cycles will take account of this.

## 5.2 IMPLEMENT MORE EFFECTIVE SUPPORT FOR RESEARCHERS

### *Background*

The University had a review of the Research and Graduate Studies Office in 2007. Action on the review was delayed pending the appointment of the Deputy Vice-Chancellor (Research) in 2008. In mid 2008, the University decided to review all parts of the administration. Consideration of this plan was a central part of the resulting review of the provision of services for research across all areas, departments/programs, schools, faculties and the centre of the University. This functional review was the first to be carried out. The review recommended that all research support be coordinated through a central Research Services Division, acknowledging that some support would continue to be located close to researchers and some may be located at a distance. Although the review was accepted as a whole, there are aspects that require clarification. Many of those aspects relate to this aim. As a result, implementation has been delayed pending the appointment of the Director of Research Services (who started on March 30 2009).

### *Mechanism*

This aim includes both of the aims in the strategic plan to “Implement more effective support for research grant applications and the management of grants received and the commercialisation of research by 2010” and to “Develop more effective support for academic staff who undertake research and research consultancies by 2010”, the strategic management of intellectual property and responsive, agile contractual arrangements. Support for commercialisation will focus on opportunities for attracting industry and other investment in research.

The Director of Research Services will consult widely on the details of implementing the Functional Review. Implementation of that review will aim to achieve these outcomes as a first priority.

The Director of Research Services, in consultation with the Deputy Vice-Chancellor (Research), will initiate major actions to facilitate linkage grants and exploitation of major funding opportunities externally.

### *Measurement*

The University will have succeeded if surveys of researchers in 2009 and 2010 show that support has improved both for grants and for commercialisation and success rates also improve.

## 6 RESEARCH HIGHER DEGREES

### 6.1 INCREASE THE NUMBER AND PROPORTION OF STUDENTS UNDERTAKING RESEARCH HIGHER DEGREES.

### *Background*

The University has a relatively small proportion of research higher degree students in relation to its overall size. Many of its best undergraduates have in the past been encouraged to go to other universities for their postgraduate work, and this outflow has not been matched by a corresponding inflow of good-quality students recruited from other universities and from overseas.

### *Mechanism*

The Associate Deans (international) of the five faculties have now identified recruitment of good quality postgraduates from overseas as a priority, and the recent functional review of marketing and international recruitment has emphasized the importance of adopting a more outward-focused approach to student recruitment. Under the new management of research support services, the management and recruitment of international research degree students will pass to the graduate research service office, thus bringing the targeting of potential markets and

recruitment of suitable students under control of the Pro Vice-Chancellor (Graduate Research) area and the Higher Degrees Committee (Research). Deans will be held accountable, via their annual performance review, for meeting targets for Research Training Scheme and all higher degree research students, subject to provision of adequate space to meet university standards for such students.

### *Measurement*

The University will have succeeded if the numbers of higher degree research students have increased by 20% from 2007 levels.

## 6.2 IMPROVE THE QUALITY OF HIGHER DEGREE BY RESEARCH STUDENT SUPERVISION.

### *Background*

The University relies to a great extent on the integrity, dedication and professionalism of research student supervisors in all the faculties. Some of these staff are in need of support through training opportunities, means of sharing their load and discussing progress problems with other colleagues. As the number of new staff recruited by the University increases over the next decade, there is a need for these less experienced colleagues to be mentored and provided with support that will help them develop into productive supervisors.

### *Mechanism*

The Higher Degrees Committee (Research) and the Pro Vice-Chancellor (Graduate Research) will implement a series of training programs targeted on supervisors, oversee mentoring programs for supervisors to be established in each faculty, and set in place new structures for monitoring and reporting on student progress. Among the new structures will be the establishment of research progress panels, which will mean that each research student reports once a semester on their progress to a panel which will include at least one member of staff who is not directly involved in supervising that student. Panels will be a mechanism for supporting supervisors and students to achieve the best results and finding productive means of tackling any problems over progress and supervision. Good supervision practice will be identified and that Higher Degrees Committee (Research) will make annual awards to outstanding supervisors. Annual progress reporting forms will be modified to provide clearer information on student progress and to encourage early warning to be given of problems in progress or supervision.

### *Measurement*

The University will have succeeded if by 2012

- (i) the range of supervisor support programs has increased
- (ii) statistics have been collected on the number of supervisors who have attended training programs, and are working with appropriate mentors
- (iii) annual surveys are in place so that postgraduate research students are able to report on their supervisory experience,
- (iv) supplementary training and mentoring is in place for any supervisors who regularly receive reports that may be indicative of the need for further support.

## 6.3 IMPROVE THE COMPLETION RATES AND DIMINISH THE ATTRITION RATES OF HIGHER DEGREE BY RESEARCH STUDENTS.

### *Background*

The problems of completion rates and attrition among research degree students are complex and subject to a variety of different factors, not all of them within the control of students, supervisors or University progress, training and reporting mechanisms. While attrition rates among research students are generally low, this is because a significant proportion of research students take periods of suspension of studies, and while on suspension do not count for the purposes of higher degree research statistics. The University is steadily increasing the number of scholarships available for top quality research students, in the expectation that students supported in this way are likely to have the best chance of timely completion of their research programs, and hence less likely to take periods of suspension from their studies. The University's present annual reporting on student progress provides only an infrequent check on student progress, especially in the early months and years of research. Within the faculties, there are several different

practical processes in place for monitoring and evaluating student progress and supervisor performance, but no consistent University-wide mechanism is in place.

### *Mechanism*

The Pro-Vice-Chancellor (Graduate Research) and Higher Degrees Committee (Research) will institute formal progress reporting on a consistent basis across the University. This mechanism will involve research students themselves agreeing to timelines and progress points that are appropriate to the kind of project on which they are engaged, and which form a 'contract' between the student and the progress panel that monitors and helps with their supervision. Progress panels will include at least one member of staff who is not directly involved in supervising that student, and will provide an important support and monitoring mechanism which includes meeting with students normally at least once in each semester. Service on such panels will be recognized in faculty workload models as part of the University's recognition that research supervision is an important function and a significant element in staff workload.

A tighter progress monitoring regime will not in itself encourage better performance from students unless there are also clear benefits and incentives to encourage students to complete their research projects in a timely manner. The University presently provides a small number of writing up awards to assist students who have already submitted their dissertations to prepare work for publication. Apart from those, the University offers no other support or awards to students who are approaching the end of their research association with La Trobe. To encourage timely completion, from 2010 onwards all students who complete and submit their dissertations within the maximum study period of 2 years for a research master's degree and 4 years for a PhD will receive a substantial financial award for timely completion. In addition, PhD examiners will be asked to recommend on the award of the PhD 'with distinction' to candidates whose dissertations are in the top five per cent in terms of overall quality.

### *Measurement*

The success of the mechanisms just outlined will be monitored by reference to the statistics for completion times, and will be rated as successful if the average completion time for a research master's student is reduced by three months by 2013 and for a doctoral student by five months by 2014.

## 6.4 INCREASE THE NUMBER AND LENGTH OF SCHOLARSHIPS FOR HIGHER DEGREE BY RESEARCH STUDENTS.

### *Background*

The University has lagged behind other universities in the state in terms of the numbers of scholarships for research offered each year, and also in the amounts awarded. While financial considerations are not the sole factor in helping a prospective student decide where to study, they may exert significant influence at the margins, and it is therefore undesirable for this situation to continue. The University also funds full-time PhD research students for only 3 years of full-time support, plus an optional six-month extension. Other universities are more realistic in recognizing that most PhD research programs cannot be accommodated within such a restrictive timeframe.

### *Mechanism*

The University will make increased budgetary provision for scholarships in the coming years, aiming to provide scholarship support for any prospective research student who has a clear first-class honours qualification. Its target for 2009 will be to offer up to 40 mid-year scholarships, and 120 scholarships for regular entry in 2010, and to waive overseas fees for overseas candidates who have competed at a suitably high level (equivalent at least to first-class honours in Australian terms). Its target for the following two years will be to increase these amounts of support by ten per cent per annum. The minimum amount of scholarship award will simultaneously be increased to match the minimum APA award, and the top candidates for each faculty will, in each scholarship round, receive a higher named award to recognize their merit.

### *Measurement*

The mechanism will have succeeded if by 2012 there are 195 scholarships allocated to higher degree research students each year.

## 6.5 DEVELOP AND PROMOTE OPPORTUNITIES FOR HIGHER DEGREE BY RESEARCH ENROLMENTS ON REGIONAL CAMPUSES.

### *Background*

The regional campuses vary by size and concentration of research expertise, making it impossible to set a uniform central policy that will be likely to ensure an increase of higher degree research students in these locations. However, there are significant developments in some of the regional campuses that maybe expected to support and promote opportunities for research enrolments.

### *Mechanism*

The Pro Vice-Chancellor (Graduate Research) in conjunction with the Pro Vice-Chancellor (Regions) will examine the ways in which research activities in the regional campuses can be supported by the addition of research students. The Higher Degrees Committee will be asked to allocate a small number of research scholarships to candidates who apply for research places that can be appropriately supervised on the regional campuses. The regional research scholarships will in the first instance constitute 5% of the total research scholarships available, and will be widely advertised as part of promoting the opportunities for regional campus research.

### *Measurement*

The University will have succeeded if there is a 20% increase over 2007 numbers in regional research enrolments by 2012.

## 6.6 DEVELOP FINANCIAL REWARDS FOR PUBLICATION AND TIMELY COMPLETION BY HIGHER DEGREE STUDENTS, WHETHER HOME OR INTERNATIONAL.

### *Background*

The contribution of research postgraduates to the national research effort is often recognized in national statistics, but individual research students who engage in conference presentations, publication and other notable activities over the course of their studies is supported unevenly across the University. Students who are making good progress in their work, but are facing financial pressures, and are not supported by scholarships, are also casualties of a system that makes no provision for supporting them.

### *Mechanism*

The Faculties will establish awards for each article, chapter, book, conference proceeding or creative work that is published by a research student during the period of their enrolment. The awards will be significant – namely up to \$1000 for each qualifying publication – and there will also be financial support for travel to present papers or poster sessions at national or international conferences. All students, whether holding scholarships or not, will qualify for a timely completion award provided they submit the dissertation within the maximum time period of two years for a master's and four years for a PHD. In the first instance, the sum made available each year under the research student support program will be \$100 000 for support of timely completion, and \$100 000 to support awards for publication and travel to conferences.

### *Measurement*

The University will have succeeded if the number of research student publications increases by 10% by 2012, and if the average completion times for Master's and PhD degrees have shown significant shortening by 2012.

## 6.7 INCREASE THE NUMBER AND PROPORTION OF TOP-QUALITY INTERNATIONAL HIGHER DEGREE BY RESEARCH STUDENTS.

### *Background*

The recruitment of higher-degree students from overseas is currently spread across many people and many parts of the University. Faculties have associate deans (international), there is a marketing branch, an international student's office, and there will soon be an appointment made to PVC (International and Future Students). However, much of the potential for recruitment of international students depends on the existence of networks of collaboration, joint

research and other common interests between academic staff at La Trobe on the one hand, and colleagues, institutes and overseas universities, on the other. At present, there is a danger of much wasted effort – for example when a well-intentioned recruiter tries to interest prospective overseas students in an area of research where there is no appropriate supervision at La Trobe. The lesson to be learned from this kind of case is that useful efforts at overseas recruitment often depend on local knowledge, at school and program level, of what research opportunities are available. There is very little by way of ‘overseas friendly’ research information available on the University’s web pages (for example, information about research opportunities in a range of languages). It is not clear whether supplying such information would help in the recruitment of overseas students, and a pilot experiment with one or two programs might be helpful in testing this idea. In general, there is a wider problem that bears on both international and domestic recruitment, namely that existing information supplied by programs and schools about their areas of research, and the potential for research supervision, are not given clearly and consistently across all areas of study in the University, are not consistently represented in web pages, or available in brochures or other media.

### *Mechanism*

The Pro Vice-Chancellor (Graduate Research) and the new Deputy Vice-Chancellor (International and Future Students) will consult at school and program level about how best to lay out information about areas of research supervision, and interest. The Deputy Vice-Chancellor (International and Future Students) will give priority to determining how best to reduce duplication in existing systems and enhance the focus on international student recruitment. Academic staff with high international profiles will be identified, and their support enlisted for realistic recruitment targeted not simply on student numbers but also in strengthening existing areas of research excellence and developing emerging ones.

### *Measurement*

The measurement of new initiatives in this area will not be available within the next three or four years, since the Deputy Vice-Chancellor (International and Future Students) will not arrive till August 2009. The questions of mechanisms and measurement are revisited after that appointment is finalized and the new Deputy Vice-Chancellor has taken up the position.

## 7 RESEARCH CENTRES AND INSTITUTES

The University will deepen its research capacity by supporting a number of new research institutes and continuing to support existing centres where they are producing significant research of demonstrated quality and they are financially viable. The institutes will provide an opportunity for a significant number of academic staff from more than one discipline area to focus their research effort on a common field of enquiry. Institutes will be funded for a fixed term, in the expectation that they will develop a strong track record of external research funding. Existing University research institutes will be evaluated on a common basis with new research institutes.

The University will continue to have three distinct kinds of Research Centres and Institutes, namely those established by an agreement with an external body and governed by that agreement (for example, ARC Centres of Excellence, Cooperative Research Centres and Research Centres in partnership with other universities both locally and internationally), styled **external**; those established with funding from the University surplus for a fixed period and constituted using the Template approved by the Academic Board in March 2009 (or subsequently varied), thus including the four cross-disciplinary, cross-Faculty Institutes, styled **University**; and those established by Faculties, styled **Faculty**.

### 7.1 POLICIES AND PROCEDURES FOR INSTITUTES AND CENTRES

#### *Background*

Policies on Centres and Institutes were adopted by the Academic Board in 1993 and have been available on the web for many years. In early 2008, it became clear that these were not being followed uniformly – in particular, the Research Centre for Linguistic Typology and the Institute for Advanced Studies did not have constitutions, aims or

methods of operation approved by Council or the Academic Board, the National Centre for Hellenic Studies and Research described itself as “free-standing” and “semi-autonomous”, the relationship between the Research Centre for Linguistic Typology and the Institute for Advanced Studies was not clear, procedures for filing reports on Centres on a yearly basis were not followed and none of the University research centres had been reviewed. Faculty Research Centres had not been reviewed as specified, with few exceptions. In summary, policies and procedures for establishment, review and dis-establishment of Centres existed but were not being followed. As a result, high priority has been given to remedying the resulting difficulties for the University firstly in respect of the existing Centres and then secondly by ensuring that policies and procedures are followed in future. Revisions of the templates for the Constitutions of Centres and Institutes have been approved by the Academic Board in August 2008 and following the creation of cross-Faculty Institutes and the comments of Deans, again in March 2009. Research and Graduate Studies Committee decided on a schedule for compliance with this policy. The first review completed at Central level was of the National Centre for Hellenic Studies and Research in the second half of 2009. As a result of the review, Council decided in October to close that Centre and establish a new Centre for Contemporary Greek Studies. Recommendations of that review are in progress including reference of matters to the Auditor General of Victoria.

### *Mechanism*

In all cases, Centres and Institutes will be established using the template approved by the Academic Board. At that time, Planning and Resources Committee will approve the planning and anticipated budget expenditure for the first three years.

Formal policies and procedures have replaced resolutions of Council and will have been approved by the Academic Board and documented in the new Policies and Procedures by June 2009.

All University Centres and Institutes produce an annual report for the Research and Graduate Studies Committee to forward to the Academic Board. Faculty Centres produce an annual report considered by the Research and Graduate Studies Committee.

In all cases, Research Centres and Institutes will have be reviewed at least every five years with review reports for University Centres and Institutes produced at the Academic Board and including recommendations on their continuation. For Faculty Centres and Institutes the reports will go to the Research and Graduate Studies Committee for comment. Proposals for University Centres and Institutes must have a constitution, based on the template accepted by the Academic Board in March 2009 (or its successor), accepted by the Academic Board and must have initial plans accepted by the Planning and Resources Committee. Each cross-disciplinary, cross-Faculty Institute will have its plan considered by the Planning and Resources Committee prior to approval by the Deputy Vice-Chancellor (Research).

The timetable for reviews of **University Centres** is:

National Centre for Hellenic Studies and Research – August 2008  
Institute for Advanced Studies – June 2009  
Research Centre for Linguistic Typology – November 2009  
Institute for Molecular Sciences – June 2010  
Centre for Technology Infusion – November 2011  
Institute for Human Security – November 2012  
Institute for Social Participation – June 2013  
Institute for Social and Environmental Sustainability – June 2014  
Biosciences Research Centre – November 2014  
Centre for Contemporary Greek Studies – June 2015

The timetable for reviews of Faculty Centres is:

#### **Humanities and Social Sciences**

Australian Institute of Archaeology – November 2009  
Centre for Dialogue – May 2010  
Institute of Latin American Studies – May 2009

Italian Australian Institute – November 2010  
La Trobe Institute of Indian and South Asian Studies – May 2011  
Philippines Australia Study Centre – November 2011  
Refugee Health Research Centre – May 2012  
Thesis Eleven Centre for Critical Theory – November 2012  
Visual Arts Centre – May 2013

#### **Health Sciences**

Australian Centre for Evidence Based Aged Care – August 2011  
Australian Institute for Primary Care – November 2013  
Australian Research Centre in Sex, Health & Society – July 2010  
The Bouverie Centre – November 2010  
Centre for Ergonomics and Human Factors – July 2011  
Mother and Child Health Research Centre – November 2011  
Musculoskeletal Research Centre – April 2010  
Palliative Care Unit – June 2010

#### **Law and Management**

Centre for Sustainable Regional Communities, Bendigo – 2008 and June 2012  
Public Sector Governance and Accountability Research Centre – September 2009

#### **Science, Technology and Engineering**

Centre for Materials and Surface Science – July 2009  
Graeme Clarke Centre for Bionic Ear and Neurosensory Research – July 2013

#### *Measurement*

The University will have succeeded in 2012 if the Centres and Institutes can demonstrate the success of Centres and Institutes in ensuring (a) that the constitutions, reporting, plans and reviews (approved by Planning and Resources Committees or Faculties) have been followed, with actions taken as indicated by plans, reports and review.

## 7.2 UNIVERSITY CENTRES

Plans for the University Centres are as follows:

- The **Biosciences Research Centre (BRC)** is a joint venture of the Victorian Department of Primary Industries with La Trobe University. It is an external Centre because there are many formal contracts which govern its operations. On the other hand, it will attract the most substantial internal investment of any Centre and therefore it merits description here. The BRC will be a world-class centre for agricultural biosciences research which will
  - facilitate collaboration across scientific disciplines
  - provide access to complementary research capability
  - enable the sharing of leading-edge technology, high-cost equipment and facilities required for advanced research and development
  - provide a flexible facility capable of rapidly adapting to future requirements
  - attract world-leading scientists.

The BRC will accommodate up to 400 staff, including scientists and support staff, from DPI and La Trobe. In May 2009, \$. This will include a Capital contribution of \$50 million (NPV in 2007) from the University. When the facility is ready for occupation, DPI's metropolitan-based Biosciences Research division staff will relocate to the new BRC, and will join La Trobe's existing biosciences staff and activities in plant and animal genomics, plant pathology, animal health and agricultural sustainability. DPI and La Trobe have engaged Major Projects Victoria, a division of the Victorian Department of Innovation, Industry and Regional Development (DIIRD), to manage procurement and construction of the BRC on behalf of the Joint Venture participants under a client-service arrangement, up to commercial acceptance. The building project is being procured and delivered as a public-private partnership (PPP) arrangement under the Victorian Government's Partnerships Victoria policy.

The research relationships will, in 2009, be under-pinned by the appointment of three BRC Professors (see Section 2.6) by La Trobe and the appointment of at least 15 joint staff for the BRC when it is open. The research collaboration aspect of the BRC is well under way in 2009 and can be judged in 2014.

- The **Centre for Contemporary Greek Studies** was established in 2009. The objectives of the Centre are:
  - To be the leading Australian Centre for academic research into matters relating to contemporary Greece and people of Greek heritage wherever they might live
  - To develop high quality social science and humanities based academic research focussing on contemporary Greece and people of Greek heritage wherever they might live
  - To use its research activities to contribute to the teaching of Contemporary Greek Studies delivered by the Greek Studies program in the School of Historical and European Studies
  - To promote and contribute to the supervision of Higher Degree research students in contemporary Greek Studies
  - Disseminate the results of research undertaken within the centre to an academic and wider community
  - To provide a site through which research relating to contemporary Greek Studies can be discussed and communicated to the academic and wider communities
  - To collaborate with other research centres and researchers at La Trobe ensure that the study of Contemporary Greece and people of Greek heritage is undertaken within a broad context
  
- The **Centre for Technology Infusion** was established in 2007 as a Research and Product Realisation Centre at the University's R&D Park. The Centre has established state-of-art environment for academic and commercially relevant research, innovation and development targeted towards high impact and strategic growth areas. The Centre's objectives are to: engage in translational research, innovation & product realisation; transition the outcomes of research and innovation into public and private sector; and provide access to infrastructure and technologies for research, innovation and commercialisation. Core research activities of the Centre are in micro/nanotechnology, sensors, wireless systems, RF/Analogue, embedded systems and System-on-a-Chip. The Centre has established industry standard design and test facilities namely, Microsoft Centre, Home Automation Innovation Centre and Product Realisation Centre and is also partner in the National Networked TeleTest Facility for Integrated Systems and the Melbourne Centre for Nanofabrication to deliver on its objectives. The Centre has established links with Semitech Innovations to develop a Smart Energy Monitoring & Management System to address climate change agenda. This has resulted in the spin-out of a Joint Venture Company (EcoEnergy Innovations) which has attracted considerable interest nationally and internationally.
  
- The **Olga Tennison Autism Research Centre** was established in 2008 with a very generous donation of \$1 million from Olga Tennison. The Centre focuses on both basic and applied research. The objectives of OTARC are to:
  - facilitate large and/or ongoing research projects
  - facilitate collaboration with other research centres both nationally and internationally
  - foster and support a National Research Network
  - conduct campaigns to improve the public profile of autism research, thereby attracting additional research funds via grants and donations
  - provide opportunities for student based research and mentoring programs
  - foster knowledge transfer to practitioners within the field
  
- The **Research Centre for Linguistic Typology** was established formally in the University in 2008 but had been operating without a constitution at La Trobe since 2000. It now operates within the Faculty of Humanities and Social Sciences. The RCLT is committed to comprehensively analysing the grammatical structures of endangered and previously undescribed languages. This commitment is part of a worldwide enterprise to document and preserve for posterity as much of the world's linguistic diversity and heritage as possible. The RCLT also undertakes typological investigations, following an inductive methodology, putting forward generalisations concerning the nature and mechanism of the human language ability and associated cognitive capacities, and investigates relationships between languages, both in terms of historical development and genetic links, and the influence of contact phenomena between geographically contiguous languages within a

linguistic area. This enables us to lay the foundation for scientific understanding concerning the 'why' and the 'how' of language evolution. The RCLT has a strong record for attracting external funding (\$2.5 million in the last 5 years), for maintaining a high rate of publication, for representation at international conferences, for postgraduate supervision (currently — early 2009 — there are eleven postgraduate students, from ten different countries), and for attracting high quality Post-doctoral Fellows (currently there are nine Post-doctoral Fellows, some financed from RCLT funds, and some from outside sources).

## 8 FACULTY, INTERNATIONAL AND REGIONAL PLANS

Each Faculty will establish plans for research. These will be discussed at Research and Graduate Studies Committee and approved by the Deputy Vice-Chancellor (Research). Deans will be held accountable to the Deputy Vice-Chancellor (Research), as part of the annual performance review, for the delivery of the plans.

### 8.1 INTERNATIONAL RESEARCH PLAN

#### *Background*

The University is a global enterprise that values its multi-cultural and multi-national community. The institution seeks to extend its international reputation, outreach and engagement over the planning period in order to enhance its core activities of teaching and learning and research. A prime objective is the development of students and staff who are equipped with the skills necessary to contribute to the common good in an increasingly inter-connected world. The University recognises that its commitment to social and environmental responsibility has a global reach. This commitment will be strategically targeted to areas of both opportunity and need to ensure that international activity will be to the mutual benefit of both the University and the international community involved. The University's international engagement will be built around meaningful relationships with a particular focus on the Asia Pacific region, and include relationships elsewhere in the world where there is a strong link to the University's strategic directions and academic strengths.

#### *Mechanism*

- There will be a limited number of **key** whole of University high level multi layered formal partnerships that will comprehensively encompass the elements of engagement including research partnerships and exchange
- In addition to the whole of University partnerships there will be a number of **major** relationships that may be focussed on a single faculty or research centre where there are particular areas of shared interest. These arrangements will not cover the full range of activities of the Key partnerships, focussing on a smaller number of the elements of engagement. These relationships may include aid or developmental programs, discipline specific exchange or placement arrangements where the faculty or research centre has particular strengths, capacity or need.
- **Individual** relationships might occur at School, Departmental or program level but may also include the activities of individual staff. The vitality of these arrangements needs to be recognised but there will generally be no need for a formal agreement to enable them
- Foster and, where possible, budget financial support for participation by staff in international research relationships<sup>14</sup>
- Suitably recognise and reward through the promotions processes, high quality and high impact international research
- Revision of Outside Studies Program guidelines and Staff performance management and promotions criteria to ensure recognition of international engagement contributions

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<sup>14</sup> Budget support would normally come from research grants. Otherwise, on a seeding basis, it would be budgeted at School or Faculty levels and so the responsibility of Deans.

## Measurement

The University will have succeeded if, by 2012:

- There is a 10% increase in the number of faculties/schools/centres participating in international partnerships which are documented in UARQ over the number known in 2007
- There is a 20% increase in the number of international Higher Degree Research Students over 2007 levels

## 8.2 REGIONAL RESEARCH PLAN

### Background

La Trobe is committed to contributing actively to the sustainable growth of its regions. Relevant applied research will be central to this role. The University has identified seven research strengths, including Agribioscience and the Environment; Health and Society; Human Society and Organisation; Human Behaviour and Thought; Human Communication; Studies of the Past; and Molecular Science. Many of these areas hold particular significance for northern Victoria, and will form the focus of increased cross-campus and interdisciplinary research. The University will also work with Regional Advisory Boards and other industry and community groups to identify research possibilities, to increase collaboration, and to ensure broad support and advocacy for regional research projects.

### Mechanism

- The University will develop research programs which meet the needs of regional communities and which align with identified research strengths such as Agribioscience and the Environment.
- Expanded research initiatives will include work by the Centre for Sustainable Regional Communities; further partnerships involving the **Murray-Darling Freshwater Research Centre, the CSIRO and Department of Primary Industries, as appropriate**, and development of the John Richards Research Initiative into Aged Care in Rural and Regional Communities.
- The University will provide appropriate support and infrastructure on regional campuses to enhance the research environment.
- A regional research mentoring and support scheme will be established for regionally based academic staff to improve research productivity across regional campuses.
- Opportunities for higher degree by research (HDR) enrolments on regional campuses will be developed and promoted to ensure an increase in HDR student numbers. This will include an increase in the number of scholarships for higher degree by research students.
- The University will take into account research involving regions and located in the regions in recognising and rewarding PhD theses of outstanding quality and outstanding performance during research candidature, similarly recognising and rewarding outstanding supervision of higher degree by research students.
- Use our research strengths, in collaboration with our regional communities, to contribute to the knowledge and understanding of environmental, economic and social transformations occurring in regional Australia.

To achieve these objectives each Faculty will by 2010:

- Review and strengthen its suite of regional programs, including higher degree by research programs, to ensure they meet community needs whilst being financially sustainable
- Identify research priorities and develop and support research programs that meet the research needs of regional communities and which align with LTU research strengths

By 2010 the University will:

- Establish cohesive organisational structures, policies and procedures to enable the development of regional teaching and research
- Incorporate a transparent regional budget stream in the University budget model
- Ensure a financially sustainable regional capital development and infrastructure plan is developed to support teaching, research and student services (including accommodation) as part of the University master plan and that this plan includes specific strategies to reduce significantly the University's carbon footprint and optimise water use

## Measurement

The University will have succeeded if, by 2012:

- Revenue from research grants and contracts has increased on regional campuses by 50% from 2007
- The number of Higher Degree by Research students on regional campuses has increased by 20% from 2007
- The weighted number of Higher Education Research Data Collection publications by staff on regional campuses has increased by 20% from 2007
- There has been a demonstrable increase in cross-campus research across the regions

## 9 BUILDINGS FOR RESEARCH

### 9.1 BY 2012, THE UNIVERSITY WILL COMPLETE A MAJOR REFURBISHMENT PROGRAM TO ENSURE THAT RESEARCH FACILITIES AND STUDENT SPACES MEET BEST PRACTICE QUALITY AND SPACE STANDARDS.

Research infrastructure requirements will be identified and prioritised by the Faculties, the Pro Vice-Chancellor, Graduate Research and the Deputy Vice-Chancellor (Research) and will be included in the campus infrastructure planning process. Once endorsed and funded, the relevant Project Director will be accountable to the Deputy Vice-Chancellor (Research) for delivery of the client requirements and to the Executive Director Infrastructure and Operations cost and program outcomes.

The University will continue to leverage support for major equipment needs and to budget for planned replacement of obsolescent equipment.

### 9.2 BY 2012, COMPLETE A MAJOR CAPITAL WORKS PROGRAM TO ACCOMMODATE THE PLANNED EXPANSION OF RESEARCH FACILITIES.

Research infrastructure requirements will be identified and prioritised by the Faculties, the Pro Vice-Chancellor, Graduate Research and the Deputy Vice-Chancellor (Research) and will be included in the campus infrastructure planning process. Once endorsed and funded, the relevant Project Director will be accountable to the Deputy Vice-Chancellor (Research) for delivery of the client requirements and to the Executive Director Infrastructure and Operations cost and program outcomes.

Delivery of the building for the \$230 million Biosciences Research Centre building is the responsibility of Major Projects Victoria acting for the Joint Venture Board (with equal representation from La Trobe University and the State Government) with involvement of the partners in the delivery of the equipment and recurrent funding. The winning consortium for the project is Plenary Research Group and the project has commenced.

The University has received \$64 million funding under the Educational Investment Fund for facilities for its research strength in Molecular Sciences. This project has also started.

As a first priority, ensure that plans for additional research students are supported by the mandated necessary space and facilities for the successful completion of their degrees.

In the new budget model, research investment occurs as part of the cost structure as well as being funded from the surplus. This section only details the investment from the surplus of Faculty and operations expenditure.<sup>15</sup>

Savings of \$1.2 million from previous research services and investment budgets were identified in 2008. As well, the previous approach of research investment going to a number of diverse, unfocused, arguably un-strategic, small projects and subsidies has been changed. This involved the cancellation of new investments for 2009 in the Latrobe Research Grant Scheme, Large Grants, the LTU Collaborative Grants Scheme, Deputy Vice-Chancellor Discretionary, Latrobe Postdoctoral Fellowships and Postdoctoral Fellow, the Charles La Trobe Fellowships, the Publications Committee and about \$700,000 of small subsidies to individuals.

Overall, the 2009 Budget invests just over \$13.5 million into research aligned with the strategic plan and aimed to achieve the planned targets of the research plan by 2012:

- A budget of \$2.1 million is proposed for an advance on the Cutler Review recommendation of funding the full cost of national competitive grants. The Government announced its commitment to this over the longer term in early 2009. Implementation is expected to raise block grants associated with national competitive grants from about 24c in the dollar to 50-80 cents in the dollar. In the 2009 budget all of the block grants are invested in the faculties and centres, but an additional 16c per competitive dollar is allocated taking the total to 40c in the dollar for national competitive grants, allocated to the Faculties on the basis of operational plans for investment in research
- The new cross-Faculty, cross-disciplinary research institutes are allocated \$1.2 million in 2009 (Institute of Human Security, Institute for Molecular Science and Institute of Social Participation Institute of Social & Environmental Sustainability)
- The Bioscience Research Centre, a joint venture with the Department of Primary Industries, Victoria, is allocated \$900,000 to support the appointment of 3 research leaders to ensure maximum linkage with research in the Faculty
- The first stage of increasing postgraduate scholarships is implemented in 2009 and nearly \$5 million in Latrobe scholarships is budgeted on top of the Australian Postgraduate Research Awards
- It will be necessary to maintain current postdoctoral Fellowships and \$2.1 million has been budgeted for that.
- Other necessary expenditure includes \$1.4 million of co-investment in grants and centres that are directly funded from outside the university – this is vital to increase research income and to maintain and replace research equipment and infrastructure. A further \$0.5 million is allocated for committed participation in the Synchrotron.

In Table 1 below, the budget for 2009 from the surplus is detailed. The budgets for 2010 and 2011 as foreshadowed in the University budget are also given.

<sup>15</sup> Included in the cost structure are investments in the University research centres which are not cross-Faculty, cross-disciplinary Institutes ( the Research Centre for Linguistic Typology, the Centre for Technology Infusion and the Research Centre for Contemporary Greek Studies). Also included is expenditure for the Innovative Universities European Union Centre. The investment in these Centres occurs by allowing deficits in their budgets. The operations of these Centres now occur through the relevant Faculties, as detailed in their Constitutions passed in 2009, but the deficits are held separately to Faculty operations for 2009 and 2010.

**Table 1 University Research Investments**

	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
<b>Research Support Grants</b>				
Full Cost Research Advance - Education		42.9	42.9	42.9
Full Cost Research Advance - Health Sciences	450.0	450.0	450.0	450.0
Full Cost Research Advance - Humanities and Social Sciences		442.9	442.9	442.9
Full Cost Research Advance - Law and Management		42.1	42.1	42.1
Full Cost Research Advance - Science, Technology and Engineering		1,098.6	1,098.6	1,098.6
La Trobe Research Grant Scheme	502.9	-	-	-
Large Grants	185.0		-	-
eResearch Grant Scheme	100.0	100.0	100.0	100.0
LTU Collaborative Grants Scheme	200.0	-	-	-
DVC Discretionary	15.0	-	-	-
Incentives	572.0	572.0	600.0	620.0
Other grants in 2008	669.6			
<b>Total support grants</b>	<b>2,694.5</b>	<b>2,748.6</b>	<b>2,776.6</b>	<b>2,796.6</b>
<b>Support for Research Centres and Institutes</b>				
Bioscience Research Centre	500.0	900.0	900.0	900.0
Institute of Social & Environmental Sustainability	150.0	300.0	300.0	300.0
Institute of Human Security	50.0	300.0	300.0	300.0
Institute for Molecular Sciences	150.0	300.0	300.0	300.0
Institute of Social Participation in Disability and Ageing		300.0	300.0	300.0
<b>Total support for Research Centres &amp; Institutes</b>	<b>850.0</b>	<b>2,100.0</b>	<b>2,100.0</b>	<b>2,100.0</b>
<b>Ph D Support</b>				
La Trobe Postgraduate Research Scholarships	3,661.8	3,810.2	4,991.2	6,135.7
Research Focus Scholarships	510.7	1,117.5	1,295.9	1,299.3
Other PhD Support	70.0	70.0	270.0	200.0
<b>Total PhD Support</b>	<b>4,242.4</b>	<b>4,997.6</b>	<b>6,557.0</b>	<b>7,635.0</b>
<b>Fellowships</b>				
LTU Postdoctoral Fellowships (4)	353.8	369.2	389.0	412.8
Postdoctoral Fellows	589.2	601.6	630.1	672.7
Charles La Trobe Fellowships (5)	1,093.8	1,137.6	1,191.6	1,272.0
<b>Total Fellowships</b>	<b>2,036.8</b>	<b>2,108.3</b>	<b>2,210.7</b>	<b>2,357.5</b>
<b>Other Commitments</b>				
DVC (Research) Funded salaries	129.4	78.4	81.7	85.3
Externally funded centres	1,005.0	833.2	811.5	611.5
RGSC Support	28.6	29.8	31.2	33.3
Publication Committee	20.7			
Other operating costs (Subscriptions)	134.7	127.9	128.3	128.9
University contribution to Synchrotron	500.0	500.0	500.0	500.0
<b>Total Other Commitments</b>	<b>1,818.5</b>	<b>1,569.3</b>	<b>1,552.7</b>	<b>1,359.1</b>
<b>Total</b>	<b>11,642.3</b>	<b>13,523.9</b>	<b>15,197.1</b>	<b>16,248.2</b>