The University of Melbourne

Research and Research Training Plan 2006

1. Mission

The University of Melbourne is committed to becoming one of the finest universities in the world.

2. Strategic Imperatives

In reaffirming its intention to be among the finest universities in the world, the University of Melbourne has set three equal priorities for excellence – research, teaching and knowledge transfer. Indeed, the University's strategic directions statement Growing Esteem proposes the fundamental character of the University be defined as a 'triple helix', a tight combination of world-significant research, a move toward graduate schools for professional training, and knowledge transfer.[1]
From 2006 over a 10-year time-frame, it is proposed that:

- investment will focus on academic areas showing national leadership and international relevance in research and research training.
- a Future Generation Fund will support priority cross-disciplinary research projects.
- Melbourne will shift toward a model of broad undergraduate programs followed by intense professional training at postgraduate level.
- the University's many and disparate knowledge transfer activities be brought together in a coherent program linking students, staff, alumni and community developed.

Policy changes will be necessary to achieve the strategic choices set out in Growing Esteem. The University will need to persuade government to lift the constraints that prevent the University from assuming more responsibility for its own income and expenditure.

The University will also need to closely examine and move to further strengthen the quality and impact of its research and research training not only nationally but also internationally. Viewed nationally, Melbourne is a leading research university. It scores strongly against every national research indicator for size, from income and publications to research higher degree load and completions. Yet the University does not have the consistency of performance or the research impact it seeks on an international scale.

3. Research and Research Training Goal

The goal is to strengthen the performance and reputation of Melbourne as a major international research university, and as a destination of preference for outstanding research postgraduate students, nationally and internationally.

4. Policy Setting Framework

The University Council is advised on research and research training (R&RT) policies by the Research and Research Training Committee through the Academic Board and Planning and Budget Committee (PBC).

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[1] http://www.unimelb.edu.au/vc/consultation/strategy.html

The outcomes of these deliberations are reflected in this Plan which in turn is linked to the University Strategic and Operational Plans.[2] Faculties and departments develop their R&RT plans within this framework. These plans provide the basis for annual reviews of performance at various levels in the University.

The University adopts a plan-driven approach to research management and development. This Plan and the more broadly based *University Operational Plan* identify short-term targets for R&RT performance. Council has also approved a limited number of longer term performance objectives (published in the *Strategic Plan*).

Academic oversight of R&RT performance is provided by the Deputy Vice-Chancellor (Research), Assistant Vice-Chancellor (Research), the Assistant Vice-Chancellor (Research Training) and Dean of Graduate Studies and the deans of faculties.

5. Objective of the *2006 Research & Research Training Plan*

The *Research and Research Training (R&RT) Plan* provides a framework of strategies and targets designed to promote excellence in research and research training by

1. Identifying, nurturing and marketing areas of research and research training of demonstrably national or international quality;
2. Developing research strengths in emerging areas of strategic importance to Australia and internationally;
3. Encouraging cross-disciplinary research;
4. Attracting the very best academics and research students and recognising their achievements in research and knowledge transfer;
5. Providing a stimulating environment for research education and training activities so that students achieve the attributes desired of Melbourne research graduates[3];
6. Strengthening research collaboration with major Australian and overseas research providers, government agencies and end-users;
7. Increasing the resources to support research and research training through external investment, strategic alliances with national and international partners and effective use of new technologies;
8. Supporting development of leading edge information management and infrastructure to enable effective e-Research;
9. Enhancing the generation and application of ideas for the economic, social and cultural benefit of the Australian and international community through strong industry partnerships, effective intellectual property management and the commercialisation of research; and
10. Fostering the responsible and ethical conduct of research and research training.

The 2006 Agenda which follows is organised in terms of key areas or themes and describes the University's major strategies and targets.

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[2] http://www.unimelb.edu.au/publications/
[3] http://www.unimelb.edu.au/student/attributes.html

6. Research & Research Training Agenda

6.1 Establishing Priorities, Recognising and Supporting Strengths

Strategies
- Encourage excellence in research and scholarship across all disciplines, while concentrating resources where researchers, research groups and research activities are of demonstrably international quality.
- Particularly nurture those fields of research activity in which the University enjoys demonstrable strategic opportunities or comparative advantages, consistent with National Research Priorities.[4]
- Foster innovative multidisciplinary and cross-disciplinary research initiatives, particularly across the University.

The University has more than 6,000 researchers, including over 4,000 higher degree research students. Research strengths have been identified across a broad range of disciplines. It is a hallmark of the University of Melbourne that researchers of high national and international standing are located in all faculties.[5]

The major focus of the University is to produce sustained research of international significance; and valuing and supporting outstanding researchers and research teams. This implies an emphasis on priority setting. Research is central to Melbourne's identity and aspirations. We seek to be research intensive *and* research comprehensive. We believe in the teaching-research nexus. But is our present situation sustainable? The Vice-Chancellor posed the question ''should the University take bolder steps ... to build a distinctive set of research capabilities to create a distinctive profile?'[6] -- this is the most challenging R&RT planning issue for 2006.

Growing Esteem argues that 'Policy direction and the lessons from international comparisons alike argue for fewer research fields performing at a higher level, and stronger cross-disciplinary links between them.'

To ensure the University is investing primarily in areas of greatest research performance and potential, a transparent and systematic review will test whether each disciplinary area is within the top three in Australia. If performance is not at an acceptable level faculties will work on an improvement plan since, in the long run, investment will focus only on those academic areas deemed capable of national leadership and international relevance. This process of evaluation will commence in 2006 to prepare the University for the Research Quality Framework exercise, due to commence the following year.

Broad research areas of particular international significance that represent major priority areas for investment by the University will be identified using a combination of the following performance criteria:
- the eminence of research leadership and the size of the research enterprise;
- the level of external funding support;
- the strength of, and output from, research education and training activities;
- the range and quality of international publications and patents;
- the breadth of peer review recognition through plenary lectures, awards and learned Academy membership;

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[4] http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/national_research_priorities/default.htm

[5] see http://www.research.unimelb.edu.au/policy/index.html#rrtmr

[6] *Growing Esteem: Choices for the University*

- the range of research collaborations and strategic partnerships established; and
- the relevance to National Research Priorities.

Research Centres form an important part of the University plan to concentrate research effort and to build critical mass in priority areas. Some recent initiatives that have been taken to position the University to further enhance its research performance in future years include the establishment of:
- the Melbourne Water Research Centre;
- the Intellectual Property Research Institute of Australia;
- a Victorian node of National ICT Australia (NICTA);
- the Centre for Cultural Materials Conservation;
- the Bio21 Molecular Science and Biotechnology Institute;
- the Centre of Excellence in Mathematical and Statistical Modelling of Complex Systems;
- the Centre for Perceptive and Intelligent Machines;
- the Asia-Pacific Centre for Military Law;
- the Centre for Nanoscience and Nanotechnology; and
- the Centre for Biomedical Engineering.

2006 Targets

- Report on the first full year of operation demonstrating that the Bio21 Institute is on track to achieving the goals specified in its 2005 Business Plan, including by attracting additional funding to the University of $2.3 million, participating in at least 9 new funded research collaborations and recruiting outstanding new research students and post-doctoral research staff (Accountability: Director, Bio21 Institute)
- Establish a Future Generation Fund which will support priority projects (Accountability: Vice-Chancellor and DVCR)
- Commence recruitment in the period 2006-2008 of at least 10 Future Generation Professors to lead collaborative research on these projects. (Accountability: Vice-Chancellor and DVCR)
- Report quarterly to Deans and Associate Deans (Research) on Research Grants and Contracts (grants advertised, grants submitted, grants awarded, contracts under negotiation and contracts executed) (Accountability: Vice-Principal, Research)

6.2 Quality Assurance: Planning, Measuring Performance and Re-planning

Strategies
- Monitor quality and performance of research and research education at all levels through regular, systematic benchmarking against the highest international standards.
- Use a research performance appraisal process to improve research management and output by faculties.
- Position the University to secure excellent outcomes from the proposed Commonwealth Research Quality Framework (RQF) exercise.[7]

Academic Board policy on quality assurance in research is to maximise quality through a strategic focus on people, physical infrastructure and resources, and management, and also to emphasise ongoing target setting, performance

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[7] http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/research_quality_framework/

evaluation and systematic re-planning, remediation and quality improvement. The key central, University-wide performance parameters are:

- external research income (all sources);
- Australian Competitive Grant performance;
- research publications (University collection);
- Group of Eight Research Performance Benchmarking Project data;
- HDR data (load, completions and PhD outcomes (including completion time and rates, examiners' category 1 to 6 recommendations and the examiners used)); and
- research student experience (as measured through the Postgraduate Research Experience Questionnaire and the Quality of Research Supervision and Academic Support University Evaluation Cycle survey).

Performance is assessed at University, faculty and department levels.

In addition, faculties and departments are required to define how they wish to be assessed, that is, the measures of research quality and performance they consider are most appropriate, and to present relevant data. It is important that faculties and departments show how such analyses are informing policy and practice and feeding into a cycle of continuous improvement.

A range of benchmarking exercises assess performance against other research intensive universities. Key measures include:

- grant competitiveness;
- progression and completion performance for research students;
- the DEST research performance parameters used for allocation of support for research training and research enabling facilities (i.e. research income, HDR load, HDR completions, research publications); and
- comparison with international departments with a similar discipline profile having regard to the quality as well as the quantity of outcomes.
- success in industry research contracts.

The University also uses other measures to monitor performance (noting that some are more relevant to certain disciplines than others), including citations data (papers, citations, and impact factor), external performance rankings (eg by the Melbourne Institute of Applied Economic and Social Research (MIAESR)[8] or the Times Higher Education Supplement[9], national or international discipline reviews and the DEST National Commercialisation Survey.[10]

The University is engaged in discussions and national debate about other measures of research quality and impact, and of the excellence of postgraduate research education and training, in the context of government plans for the RQF.

The University has established a definition of 'research active' for both 'teaching and research' and 'research only' staff as a minimum expectation for statistical purposes, recognising that any such definition cannot adequately capture all aspects of research and scholarship. Faculties are also asked to define their expectations, and these will be level-dependent and discipline dependent.

The University's comprehensive cycle of institutional performance monitoring, assessment, reporting and improvement is described in *Ensuring Accountability.*

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[8] http://melbourneinstitute.com/
[9] http://www.thes.co.uk/
[10] ttp://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/commercialisation/nsrc.htm

Staff performance is monitored at all levels (individual researcher, head of department, department, dean, faculty and university-wide). The Human Resources Performance Development Framework provides an opportunity for heads of departments to:

(i)   appraise individual staff performance on such matters as level of research activity, research supervision and research ethics compliance issues; and

(ii)   set objectives and review career development and support plans.[11]

All staff, including heads of departments and deans take part in this process.

Quality assurance mechanisms have also been adopted with regard to research and research training management and services. Customer satisfaction surveys are conducted annually involving deans, heads of departments, students and senior staff on the Quality of University Management and Administration. Student perceptions of the quality of supervision and academic support are also monitored through annual surveys. All academic support groups take part in annual quality self-assessments, the Operational Performance Review and five yearly reviews of departments.

2006 Targets

- Report by each faculty to the 2006 Operational Performance Review indicating the national standing in research and research training for each department / discipline and, for departments/disciplines not achieving a leading national ranking (ie 'top three' or equivalent), the actions that are being taken to achieve such a ranking (Accountability: Deans)

- Demonstrate that Melbourne is well placed to secure an institutional outcome from the inaugural Research Quality Framework exercise that matches its standing as Australia's leading research University, by means of the conduct of an internal, multi-disciplinary research assessment exercise and other initiatives (Accountability: DVCR)

- Report to Academic Board and Council demonstrating improvement in Melbourne's research standing as measured against internationally recognised indicators of research performance (Accountability: DVCR)

- Report to Academic Board demonstrating support for all research higher degree students in each faculty: for those faculties with completion rates below 65%, a decrease in non-completion rates of at least 10% (1999/2000 cohort); and research supervision satisfaction levels of at least 4.0 (Quality of Research Supervision and Academic Support and Postgraduate Research Experience Questionnaires) (Accountability: Assistant Vice-Chancellor (Research Training) and Dean, School of Graduate Studies and Deans)

6.3 Infrastructure and Funding

Strategies
- Place a high priority on the growth of external funding for research, from both government and industry, and on diversifying the University's research funding base.
- Upgrade the total quality space available for R&RT, through a combination of new resources and renovating existing facilities within budget constraints.
- Provide access to high quality infrastructure through alliances with other institutions and new generation information and communication technologies.

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[11] http://www.hr.unimelb.edu.au/performance-development/

- ▪ Through a combination of faculty-based and centrally-funded initiatives, position Melbourne researchers to be more competitive in gaining external research funds.

National and international competitiveness in winning research funding is central to achieving the mission of the University.

A particular focus is the maintenance of a strong performance in Australian Competitive Grant Schemes, especially the ARC and NHMRC. These schemes frequently form the foundation for major longer term collaborative bids.

Securing greater funding from overseas sources is a priority.

Peer support and encouragement are crucial. Academic colleagues need to play a very active role in helping researchers, especially those less experienced in grant winning, to target the right opportunities, plan ahead, prepare drafts early and seek comments on successive drafts, and communicate clearly.

Academic support and mentoring are vital. Senior academic staff, especially, also need to assist colleagues to develop their track records and be active in publishing, professional networks, conferences and other avenues to ensure their work is well known.

To complement this peer support, the University will provide expertise to facilitate the bidding by academic staff for external funding, in particular through the Melbourne Research Office[12], Faculty Offices, Melbourne Ventures Pty Ltd[13] and the School of Enterprises.[14]

In addition to working with the Melbourne Research Office to bring a commercial perspective and business planning expertise to research bids, where appropriate, Melbourne Ventures aims to attract pre-seed and venture capital funding to support developing technologies.

The School of Enterprise will market consulting opportunities and help project manage tender bids and consultancies.

Quality R&RT outcomes require state-of-the-art infrastructure resources to underpin performance. The University will seek to provide access to library facilities and high speed international networks, research equipment, workshops, serviced laboratories, animal houses and technical and administrative support within its financial capacity.

'e-Research' is an emerging priority. eScience and its Australian derivative, e-Research, is about collaborative research. Sir John Taylor (UK Director General of Research Councils, Office of Science and Technology) observed that 'eScience is about global collaboration in key areas of science, and the next generation of infrastructure that will enable it'; about research through 'distributed assets' (the people involved in a project do not necessarily work in the same place, or for the same organisational entity), allowing research to be done 'faster, better or different.' The University, under the auspices of the Information Division[15], will work to provide appropriate leading edge information management and infrastructure to support e-Research. This will include a sustainable solution for access to, storage and preservation of research data and research publications, thus creating a secure

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[12] http://www.research.unimelb.edu.au/

[13] http://www.research.unimelb.edu.au/ventures/

[14] http://www.research.unimelb.edu.au/enterprise/

[15] http://www.infodiv.unimelb.edu.au/

digital archive of the University's intellectual capital for current and future researchers and research students.

The University has made a series of major capital investments to further enhance its research profile and comparative advantage in areas of strength and new opportunity. These include
- the University Square development
- redevelopment of the Western Precinct to house the major biotechnology initiative Bio21;
- participation in the Australian Synchrotron Program consortium with CSIRO and Monash University to build nine beamlines for the Synchrotron; and
- relocation of the School of Dental Science to a new building incorporating the Dental Hospital.

Investments will be ongoing in physical infrastructure, information and communications technology (ICT) and e-Research.

Academic staff will be encouraged to form networks and strategic alliances to share expensive resources, and to bid for research infrastructure grants.

Internal University-level funding schemes will be used to seed-fund new and promising initiatives, support early career researchers and encourage staff to continue with projects that were very close to being funded in major schemes and submit enhanced proposals.

Priority areas for funding will be as follows:
- research scholarships (matching with faculties or external bodies);
- early career research grants (matching with faculties);
- competitive seeding research grants for teaching and research staff;
- national and international collaborative linkage grants;
- research grant preparation awards;
- HDR academic and leadership extension programs;
- research mentoring development awards;
- career interruption research initiatives;
- major equipment awards (matching with external bodies);
- provisional patent support grants (matching with departments or faculties); and
- publication grants (matching with departments or faculties);
- programs for mid-career researchers.

DEST funding for research training and research infrastructure is based upon relative national research performance in the RTS, the IGS and the RIBG Scheme. The University will have regard to the R&RT performance by faculties when allocating funds to support academic activities as part of the annual budget process. It is University policy to provide all RIBG funding to faculties on an as-earned basis. A substantial proportion of RTS and IGS funding will also be provided on the basis of performance having regard to the University objective of nurturing research excellence across all disciplines. Eligible staff in affiliated institutions that contribute directly to the University research profile will be assisted to strengthen their research activities.

The University will work to maximise the outcomes from the proposed RQF in terms of both reputation and funding.

2006 Targets

- Increase research income from all sources by 12% (Accountability: DVCR and Deans)

- Increase between 2004 and 2006 the amount of research funding awarded by international agencies by 20%, ie from $ 16.7 million to $20 million (Accountability: Deputy Vice-Chancellor (Research) & Deputy Vice-Chancellor (International)).

- Increase by 25 percent, over 2004 grant outcomes, the number of early career researchers being awarded external research grants (Accountability: DVCR)

- Increase participation and success rates in the ARC Discovery-Projects Scheme in accord with the targets agreed by deans and heads of department in consultation with the Deputy Vice-Chancellor (Research) (Accountability: DVCR, Deans and Vice-Principal, Research)

- Implement the findings of the joint MRIO-IRU-Faculties Working Party on 'Facilitating International Research Links' designed to enhance information and advice on Australian and overseas schemes supporting international research collaboration (Accountability: Vice-Principal, Research)

- Successfully implement the Melbourne Strategic Research Initiative Fund to establish multi-disciplinary Centres within the University and to increase major research bid success for projects greater than $1million. (Accountability: DVCR and Deans)

- Establish an Administration/Faculties Taskforce to examine and recommend changes to policies, procedures or services designed to 'make it easier' for researchers to do business with the public, private and not-for-profit sectors (Accountability: DVCR)

- Increase the use of University research agreement templates by 25% compared with 2005 levels (Accountability: DVCR)

- Work to support the research-related strategies and targets set out in the *Information Management Plan 2006-2008 (IMP)*[16] (Accountability: DVCR and Deans, Vice-Principal, Information).

6.4 Collaboration and Partnerships

Strategies
- Actively identify and develop opportunities to engage Australian and international industry in collaborative research relationships.
- Foster enhanced linkages in research and research training with Australia's major Publicly Funded Research Agencies, statutory authorities, government departments and key medical research institutes.
- Leverage the infrastructure of the Bio21 Institute to develop new collaborative relationships with commercial and academic partners in biotechnology.
- Enhance key international research alliances.

A priority within the 'Melbourne Agenda' is to seek new partners and to strengthen existing alliances for mutual benefit. Productive partnerships will be sought with universities, research organisations and industry as well as with policy and funding agencies at regional, national and international levels.

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[16] http://www.unimelb.edu.au/isc/lindenderry/IMplandraft.pdf

Mechanisms that will be used to achieve desired outcomes include:
- affiliation agreements with major research institutions;
- bilateral Memoranda of Cooperation agreements with international institutions;
- the Universitas 21 consortium;
- cooperation among the Group of Eight;
- agreements for shared access to equipment and facilities;
- joint research training programs with like international research-led institutions;
- national and international visiting researcher programs;
- the Miegunyah Distinguished Visiting Fellowship Program for overseas scholars
- staff and student exchanges;
- seed-funding of collaborative research ventures;
- multi-party bids for programs such as CRCs, ARC LIEF and ARC Centres of Excellence;
- participation in, research consortia such as Neurosciences Victoria, Victorian Partnership for Advanced Computing, and the National ICT Institute (NICTA); and
- engagement in the Australian Synchrotron Project.

Partnerships internationally are of increasing importance.

2006 Targets

- Increase participation and success rates in the ARC Linkage-Projects Scheme in accord with the targets agreed by deans and heads of department in August 2005. (Accountability: DVCR, Deans and Vice-Principal, Research)

- Achieve a significant involvement in the design and development of beamlines for the Australian Synchrotron Project. (Accountability: DVCR and Deans, Faculties of Science, Engineering and MDHS)

- Achieve a 20% increase in Australian contract research income for 2006 (cf 2004 research data). (Accountability: DVCR and Deans)

- Implement the new suite of standard Research Agreements for sign-off by heads of department and deans to streamline interactions with government and industry. (Accountability: Vice-Principal, Research)

6.5 Research Training

Strategies
- Give high priority to timely quality completions of research higher degrees in the context of designated areas of research strength.
- Broker opportunities for increased industry investment in research education and training, particularly through the Melbourne Research Scholarships Program.
- Provide postgraduate research students with research supervision, infrastructure and support of the highest possible quality, enhancing their career prospects through programs designed to develop leadership and professional skills, and use regular, systematic feedback from such students to assist in the professional development of supervisors.

Research students make a major contribution to the research profile of the University.

It is important for research projects to be chosen that are compatible with the interest and academic capability of the student, commensurate with the expertise of the supervisor and achievable with a realistic time frame and the resources available.

The University will deliver an integrated program of enrichment, academic support and professional skills development programs to Australian and international postgraduate students from enrolment through to completion of their studies. Initiatives from the SGS will include:

- comprehensive orientation and induction programs in collaboration with the University of Melbourne Postgraduate Association, faculties and departments;
- an integrated suite of academic skills and professional development programs for commencing, continuing and completing research students;
- an academic orientation program for international students; and
- academic activities grants for conferences, seminars, symposia, web developments, exhibitions and academic events.
- a research higher degree enrichment program that is unique to the University of Melbourne and includes leadership and career development opportunities, international exchange and travel scholarship initiatives and specialised programs including the Writing Centre for Researchers and Scholars,

The University of Melbourne will also contribute to the ongoing improvement of doctoral education both nationally and internationally through leadership and active participation in a number of initiatives at the forefront of global collaboration including:

- a multi-year international project to study trends in doctoral education with the Centre for Innovation and Research in Graduate Education, Washington
- further developing cotutelle arrangements for doctoral students
- development of international generic skill programs, both through student exchange and e-learning
- contributions to international (U21, CAGS, CGS) and national meetings of Deans of Graduate Studies

2006 Targets

- Ensure all new RHD students have an advisory panel throughout their candidature (Accountability: Assistant Vice-Chancellor (Research Training) and Dean of Graduate Studies & Deans)
- Report to Academic Board demonstrating for all research higher degree students in each faculty:
  - o for those faculties with completion rates below 65%, a decrease in non-completion rates of at least 10% (1999/2000 cohort); and
  - o research supervision satisfaction levels of at least 4.0 (Quality of Research Supervision and Academic Support and Postgraduate Research Experience Questionnaires) (Accountability: Assistant Vice-Chancellor (Research Training) and Dean of Graduate Studies and Deans)

6.6 Staff Recruitment and Development

Strategies

- Attract, encourage and retain staff who excel in research, research training and knowledge transfer.
- Give high priority in the reward and recognition systems of the University to excellence in basic and applied research, research education and research commercialisation.
- Support the professional development needs and interests of our researchers, research supervisors and research administrators.

The University must attract the very best researchers. Recruiting and retaining top academic staff will become increasingly competitive with a significant proportion of

the Australian academic workforce expected to retire in the next ten years. The market for research students, especially international students, is also global and highly competitive.

Faculties and departments will be expected to nurture new staff through mentor schemes and to take measures to realign the research activities of existing staff in accord with planned outcomes and research funding realities.

Development of academic staff skills to achieve expertise in research and research education is an important priority. The University will provide assistance through a range of central services linked to Human Resources, the Centre for the Study of Higher Education, the Information Division, the SGS and the Melbourne Research Office to improve research and research training performance.

Training programs to improve the quality of research supervision will be conducted with attendance being mandatory for all new supervisors with other academic staff members being strongly encouraged to attend refresher courses. *The Eleven Practices of Effective Postgraduate Supervisors* developed by the University's Centre for the Study of Higher Education and the SGS will be promoted to academic departments and supervisors to provide strategies for the development of flourishing HDR teaching and learning environments.[17]

The support of early career researchers is a major priority in the central, internal grant programs that seed fund new initiatives and new collaborations.

Faculties and departments will be expected to allocate funds to recruit, support and retain high performing staff and nurture support networks.

Mechanisms to recognise excellence in research performance at the individual level include:
- the promotion process, including to Level E;
- Laureate Professorships for outstanding research achievement and leadership;
- performance-based contracts for senior staff;
- market loadings in specific disciplines;
- a generous Intellectual Property (IP) policy;
- Universitas 21 fellowships to promote exchange with other partner universities;
- prizes and awards to outstanding researchers (staff and students), such as the annual Woodward Medals in Science and Technology, and the Humanities; and
- prestigious scholarships for outstanding RHD students.

2006 Targets

- Develop a program for Mid-Career Researchers and hold a 1-2 day workshop for emerging Research Leaders (Accountability: DVCR)

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[17] (www.gradstudies.unimelb.edu.au/supervisors/publications/11practices.pdf)

6.7 Intellectual Property and Innovation

Strategies
- Encourage staff and students to develop, protect and effectively manage intellectual property
- Promote and facilitate the commercialisation of research, including commercial research relationships, licensing and start-ups
- Develop new sources of research income and investment (incl. venture capital) through marketing problem-solving capacity and technologies to the business community.

The University seeks to provide an environment to enhance the generation and application of ideas for the economic, social and cultural benefit of the Australian and international community through strong industry partnerships, effective intellectual property (IP) management and knowledge transfer.

From the Vice-Chancellor's Growing Esteem Discussion Paper

Commercialisation … has multiple meanings – from attracting private investment in research programs to recruiting full-fee students, providing consulting services for fees, to licensing intellectual property, to setting up private companies to develop and market new technologies ….
In Australia the 'public good' dimension of academic work is often associated with public funding, while private investment from the commercial world is seen as geared to profit alone, rather than the sustainable provision of goods or services to a wider public. Yet, where governments act as clients for research projects, this form of 'commercialisation' taps public sources of money. In the literature on commercialising university research, generating profit is typically not the driving motivation. Rather, commercialisation is embraced as a vehicle for knowledge transfer, putting new knowledge, especially new technology, to good social and economic use. It provides a way to engage with the 'real' world, generate additional rewards for academics and support research outside the framework of existing funding bodies.

The University will look to identify and support opportunities for the commercialisation of University-owned IP through research contracts, licence agreements and spin-off companies. Engagement with 'end-users' and investors is critical for researchers to bring ideas, inventions and innovations to the market. This activity must be valued and supported.

For Melbourne to improve IP management and commercialisation to a level approaching that of its national and international peers requires University-wide priority setting, planning and long-term commitment; policy changes; revised academic support service structures; and additional investment.

Providing researchers with improved opportunities to commercialise their research is one of the top priorities in the *Operational Plan, e.g.*
- Policy changes are being proposed to clarify and assert institutional ownership of staff IP, excluding scholarly works. Creators (40%) and their departments (40%) will be the major recipients from the net proceeds of commercialisation.
- The University has increased the funding to Melbourne Ventures Pty Ltd to provide advice and guidance on issues relating to patenting and intellectual property protection, technology licensing, business planning, access to venture capital funding and start-up company formation.

- The University will also continue to support its investment in Uniseed as a way to ensure its early-stage technologies have access to capital, whilst also seeking to access external capital from sources such as the Federal Government's Pre-Seed funds.
- The Multimedia Licensing and Technology Contracts Unit will assist staff to bring to the market curriculum materials, multimedia products and educational software.
- The Melbourne Research Office will lead a new 'Business Investment in Research' Taskforce, with Faculties, to recommend changes to policies, procedures, processes and support services required to facilitate greater external investment in University research and research training and collaborative research ventures.
- The School of Enterprise will help staff work on consultancies and commissioned projects with public and private sector bodies.

2006 Targets

- Report to PBC and Council demonstrating achievement of targets set for Melbourne Ventures Pty Ltd in the first year of a five-year business plan directed at increasing the level of returns on technology to $14 million by 2010 (Accountability: Deputy Vice-Chancellor (Innovation and Development), Director Melbourne Ventures Limited)
- Achieve 30 Invention Disclosures. (Accountability: Director, Vice-Principal, Research; Managing Director, Melbourne Ventures Pty Ltd and Deans)
- Melbourne Ventures Pty Ltd to review at least 50 commercialisation opportunities from within the University and affiliates. (Accountability: Managing Director, Melbourne Ventures Pty Ltd)

6.8 Research Integrity and Compliance

Strategy
- Maintain the highest ethical standards in compliance with internal and external regulations or codes of research practice.

The University has an obligation to its members and to the community to ensure compliance with the law in all its activities and contractual conditions agreed with R&RT sponsors and collaborators.

The University's Code of Conduct for Research (*Regulation 17.1.R8)* prescribes standards of work performance and ethical conduct expected of all persons engaged in research at the University.[18] The Code incorporates a section on conflict of interest disclosure and management, supported by a comprehensive information and resources site. All researchers are required to manage their research programs to maintain compliance with University regulations.[19]

Ethical conduct and the pro-active assessment and management of risk are the foundation stones of the University Compliance Program. Compliance is closely monitored in the research-related areas of research integrity, conflict of interest, research involving human participants, animal welfare, bio-safety and privacy, as well as financial management, occupational health and safety, competitive neutrality and trade practices.

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[18] http://www.unimelb.edu.au/ExecServ/Statutes/r171r8.htm

[19] http://www.research.unimelb.edu.au/admin/res.conduct/code.html

The University Compliance Officer and specialist University committees play an important oversight role but the University seeks to inculcate responsible conduct within its research culture at all levels.

Research supervisors, including higher degree supervisors, are responsible for ensuring that the responsible conduct of research is accorded the highest possible priority.

Research Integrity

The concept of integrity in research cannot … be reduced to a one-line definition …

For a [researcher], integrity embodies above all the individual's commitment to intellectual honesty and personal responsibility. It is an aspect of moral character and experience.

For an institution, it is a commitment to creating an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness, and lawfulness …

From *Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct* (2002) a Report of the US National Academies (p.5) (http://www.nap.edu/books/0309084792/html/)

2006 Targets

- Complete an analysis of training needs and current programs in each area of research ethics and compliance (Accountability: DVCR)
- Implement and report in July and December to Risk Management Committee on progress against the Biosafety Management Plan (Accountability: DVCR)
- Demonstrate a strong degree of satisfaction with the functioning of University ethics committees (Accountability: DVCR)

6.9 Promotion of Research

Strategies
- Promote the research achievements of the University to national and international communities.
- Effectively communicate the University's contribution to the economic, social, cultural, intellectual and scientific development of Australia.

Research achievements will be promoted using the various channels available both within and outside the University, including an increased use of internet-based dissemination. The goal is to highlight the excellence of the scholarship being pursued and to underline the benefits to external providers of forging strategic partnerships with the University.

Some of the initiatives to be taken include:
- regular research features in *UniNews*;
- two editions of the *Research Review*, a quality, magazine-style report on research highlights;
- encouragement of external news media to report University research breakthroughs;
- promotion of University research achievements at international education and trade fairs;
- profiling the achievements of University research leaders;

- highlight reports to the community of grant awards and other research successes;
- discipline-based conference presentations by staff to report new research findings;
- invitations to distinguished researchers to participate in events such as the Dean's lecture series;
- acknowledgement of research prizes and awards by staff and students; and
- features in international media of successful completion by overseas students of research higher degrees and relevant research outcomes.

2006 Targets

- Report to the R&RT Committee twice yearly on media liaison activities and media coverage of R&RT related stories. (Accountability: Senior Vice-Principal)

6.10 Leadership, Management and Support Services

Strategies
- Foster strong academic leadership in R&RT.
- Provide high quality academic support services and management information.

The Deputy Vice-Chancellor (Research) is responsible on behalf of the University for overseeing R&RT matters at the University, in particular, coordinating the development and implementation of research policies, improving the support mechanisms for research, benchmarking and monitoring performance, establishing strategic inter-institutional linkages, facilitating knowledge creation and technology transfer and promoting University research capacity and outcomes to government, industry and the general community.

The Assistant Vice-Chancellor (Research Training) and Dean of Graduate Studies oversees ethical issues and postgraduate activities including quality assurance of research higher degrees, supervisor training, development of HDR policy, the monitoring of HDR progress and completions and the provision of postgraduate enrichment programs.

At the faculty level Associate Deans (R&RT) provide focussed leadership for research planning, target-setting, research development, performance review and coordination of graduate studies matters. Heads of departments, directors of research centres and deans of faculties are expected to exercise leadership in establishing the research profiles for the disciplines within their jurisdiction and, in facilitating quality research outcomes.

The joint Academic Board and PBC R&RT Committee, its committees (including the Research Higher Degrees Committee) and the Melbourne Scholarships Policy Committee are important structures through which the broader academic community engages in providing research direction for the University.

The major University R&RT academic support services are the Melbourne Research Office and the SGS. Several other offices, including Human Resources, Financial Operations, Legal and Compliance, Scholarships, Information Division (including Library), International and Student Services and the School of Enterprise also provide services. A number of faculties provide specialist administrative support to assist in the management of, and accountability for, the faculty research profile. Technology commercialisation services are provided by Melbourne Ventures Pty Ltd and the

Multimedia Licensing and Technology Contracts Unit. These are enabling structures designed to create an environment within which internationally-competitive research and research training can be nurtured.

2006 Targets

- Achieve high levels of staff satisfaction with the introduction of an Oracle-based Research Management System within the University Systems Project (Accountability: Senior Vice-Principal and DVCR)
- Based on the review of the pilot Professional Development Program for Research Administrators, establish an ongoing program (Accountability: Vice-Principal, Research; V-P (Human Resources); and Faculty General Managers)

18 January 2006