

PhD Review Working Party

Final Report

August 2009

Report of the PhD Review Working Party

Executive Summary

The environment for postgraduate research students in Australia has changed significantly in the last decade¹. While demand for high level skills continues to grow, Postgraduate research students can no longer necessarily expect to enter academic employment, and may be just as likely to move into professional and managerial occupations in both the private and public sectors in areas outside traditional disciplinary boundaries. Within the academic world, the continuing high growth of knowledge tests the boundaries of disciplines, expertise and the capacity of individuals to make ongoing contributions to knowledge growth. Despite these changes, the format of PhD training has changed little in recent times. It is therefore essential to review how well current training meets the new needs of current and future graduates, academic disciplines and the knowledge professions.

This report aims to identify areas in which the University of Sydney can improve its doctoral program while maintaining its reputation for excellence in education and research. While it is recognised that there will be many differences in the expectations of disciplines, faculties, graduates and employers, the PhD is, and is likely to remain the University's premier research degree. The changes suggested here represent an institution-wide approach which will need to work in partnership with ongoing improvement at the faculty and discipline level.

Terms of Reference

The Working Party to review the University of Sydney's flagship degree, the Doctor of Philosophy, was proposed by the Research and Research Training Committee of the Academic Board in May 2008 and first met in June 2008.

The Working Party's goals were to:

1. articulate the nature and aim of the PhD in a way that takes account of contemporary research needs, disciplinary diversity and academic practice
2. review the PhD experience at the University of Sydney with the aim of ensuring that it is:
 - academically excellent
 - distinctive
 - relevant to professional advancement in academia and the public and private sectors
 - properly resourced
3. consider the following elements of a PhD at the University of Sydney:
 - encouraging employer/graduate dialogue (expanding the possibilities for graduate destinations);
 - training for academic and other professions; and
 - supporting entrepreneurialism
4. identify the attributes of good supervision and how they can be fostered
5. identify elements of a strong research environment and ways in which it can be fostered

¹ *PhD Graduates 5 to 7 Years Out: Employment Outcomes, Job Attributes and the Quality of Research Training*, (2007) University of Queensland. Commissioned by the Department of Education, Science and Training.

Membership

Professor Kathryn Refshauge (Chair)
Professor Alison Bashford (until December 2008)
Ms Carolyn Blomley
Associate Professor Marilyn Fairskye
Professor Jillian Kril
Associate Professor Peter McCallum
Professor Brian Paltridge
Ms Yvonne Soper
Professor Bruce Sutton
Professor Neville Weber
Professor Kate White

Recommendations

1. That the University investigate the development of short courses to enable development of the desirable graduate attributes.
2. That a path for entry to the PhD program be established for high performing graduates of higher level courses that do not offer research honours components.
3. That the method of awarding scholarships be monitored and reviewed, as appropriate, to reflect the variety of paths taken by highly competent candidates enrolling in a PhD.
4. That supplementary coursework and training opportunities be freely available and easily accessible to all PhD candidates, as required. Such supplementary studies should not be mandatory.
5. That, prior to enrolment, the supervisory team and candidate ascertain the availability of all equipment and supporting infrastructure that the research project is likely to require. It is further recommended that, prior to enrolment or at an appropriate stage early in the development of the project, the supervisors, together with the candidate, prepare a budget as part of the research proposal, and prepare a statement concerning how they plan to support the research program.
6. That there be a review by the SEG Research Training Committee of central and faculty-based induction processes with a view to identifying appropriate faculty and central responsibilities to best ensure efficiency and effectiveness. Faculties should carry out induction sessions at the start of each semester that ensure that:
 - (a) candidates have been supplied with a local induction kit containing a map of the campus, information on the discipline/department and its processes, relevant committees and a list of staff significant to the workplace and their contact details;
 - (b) candidates have received The University of Sydney "Services for Students" booklet and Postgraduate Studies handbook and have been made aware of learning and support organizations within the University including the Sydney University Postgraduate Representative Association (SUPRA);
 - (c) OHS information and, where appropriate, training has been provided to candidates and has been read and understood by them. Such information should include emergency information, contact details of local OHS officers, the OHS website and relevant policies;

- (d) The candidate is made aware of administrative requirements within the department/faculty relating to their candidature, such as attendance, use of university vehicles, application for fieldwork, special duties and other leave;
 - (e) Policies with respect to intellectual property, including questions of authorship and exploitation of inventions and other intellectual property, have been agreed.
7. That supervisors and candidates complete a Postgraduate Research Student Induction Checklist within the first three months of candidature, and the completion of this checklist be confirmed by the Postgraduate Coordinator.
 8. That the current *Code of Practice for supervision of postgraduate research students* be updated to reflect changes to the administrative structure of the University, requirements that each candidate have *at least* one associate supervisor (and preferably more than one), and that the responsibilities of University, faculty, supervisor and candidate be revised in light of recommendations in this report.
 9. That within the first three months of candidature all candidates and supervisors negotiate a *research agreement* to facilitate the successful completion of the research degree.
 10. That the structure for supervision at the University of Sydney be reconceptualised to establish the principle that candidates are supervised by a supervisory panel, consisting of a primary supervisor and one or more associate supervisors. Together, the team should:
 - (a) be eligible to supervise candidates;
 - (b) have content expertise in the area of the candidate's research;
 - (c) have demonstrated experience in effective supervision;
 - (d) be familiar with the University's processes and resources;
 - (e) agree to provide timely feedback;
 - (f) be able to identify problems early, and formulate appropriate remedial strategies;
 - (g) be so structured that individuals do not normally take the role of primary supervisor for more than 5 candidates.
 11. That training of supervisors be mandatory. Different types of training should be available to address different needs, and should include:
 - (a) ITL course for new supervisors, in addition to recommendation to work closely with experienced, effective supervisors;
 - (b) effective, short induction courses provided for experienced supervisors new to the University of Sydney;
 - (c) effective, short refresher courses provided for experienced supervisors at the University, allowing a simple means by which to maintain currency with changing University and Faculty procedures and expectations of the candidature;
 - (d) effective staff development courses for supervisors who are having difficulty with their supervisory responsibilities. It is further recommended that the Associate Dean (or equivalent) for RHD candidates be given responsibility to ensure periodic review of quality of supervision.
 12. That regular meetings be required between supervisors and candidates. These meetings should take the following form:
 - (a) candidate and primary supervisor meet at least once per fortnight, although these arrangements can be varied if agreed by both supervisor and candidate, (making due allowance for absences by student and staff member), with meeting of full supervisory panel at least every three months;

- (b) to enable the whole supervisory team to be regularly updated on progress, meetings should be face-to-face. In exceptional cases, meetings could take place via Skype, telephone conference or email e.g. if temporarily in isolated locations.
13. That the research climate be strategically enhanced by:
 - (a) wherever possible ensuring that there is a concentration of students within research areas, and that no student is working in isolation; and
 - (b) provision of teaching opportunities, or other work experience relevant to the candidature, to encourage engagement by the student in the life of the academic unit, and to establish collegial relationships with academic colleagues.
 14. That the Academic Board, in consultation with the Senior Executive Group, develop a policy statement specifying the minimum resources available to research higher degree students. Such a policy should specify expectations in relation to provision of work space and storage, technical and IT support, communication resources, photocopying, library, postage, tearoom and other facilities, out-of-hours access, conference and research support, and should take due note of previous work by SUPRA and CAPA in this area.
 15. That all candidates continue to be enrolled on a probationary basis but at the end of the probation period they undergo a process of confirmation of candidature whereby their progress to date, project and proposed plan for completion, are critically reviewed.
 16. That annual progress reviews should be mandatory for all candidates but the format of the review be made more flexible to allow for tailoring of requirements to address the learning needs of particular candidates and the research norms of a faculty/school/discipline.
 17. That faculties use the annual progress reports to inform decisions about research training, infrastructure and implement changes where appropriate.
 18. That a secure online reporting system be established to facilitate the annual review process.
 19. That the University have in place written policy and procedures whereby a candidate's complaint(s) against a faculty or supervisor can be heard and resolved in a fair, private and timely manner.
 20. That the University require all faculties to have in place a form of *completion review*, appropriate to the discipline, whereby PhD students present their work to a Faculty-based review panel. This review should be structured to best accommodate disciplinary practice and should normally take place 3 to 6 months before the candidate's date of submission. It should be presented before a panel of reviewers who are able to give the candidate feedback on their work, other than just the candidate's supervisors, and should be a pre-requisite for all students wishing to submit their thesis for examination.
 21. That the current Postgraduate Coordinator position be replaced by *Director of Postgraduate Research* or something similarly-titled, and that these persons be given the level of training and support commensurate with their pivotal role in the monitoring and support of research candidates.

- 22.** In order to provide evidentiary support to its aspirations to global standards, and to provide exemplars which would form the basis for ongoing discussion of PhD standards across the University it is recommended that a working party investigate
- (a) an examination system in which examiners report the standing of the thesis against four or five bands calibrating the work against recent international work in the discipline
 - (b) a mechanism whereby examiners can nominate a small percentage of the best theses for an award, such as a Vice Chancellor's Outstanding PhD Thesis award.
- 23.** That a process be developed whereby the Nomination of Examiners form and Examiners' reports are completed online.
- 24.** That all PhD students be required to submit an electronic version of their thesis to the University Library before the award of their degree. The Library should develop processes that facilitate this submission and ensure that all of these are lodged with the Australian Digital Theses Program.
- 25.** That advice on study design, statistical analysis and writing skills, specific to the candidate's area of research, be freely available and accessible to all candidates.

1. THE NATURE OF THE PhD

Traditionally the PhD in Australia is conceived of as a 3 – 4 year full-time program of research (or part-time equivalent) conducted under the supervision of an experienced researcher, combined, in some cases, with courses of advanced study, the results of which are documented in a final thesis that makes an original, substantial and significant contribution to knowledge in the discipline, a substantial proportion of which is deemed by peers (examiners) to be of publishable scholarly quality. For the individual, it should be a stimulus to the inquiring mind, the formative and crucial stage in a research career, and a significant step towards lifelong learning. For higher education institutions, thriving PhD programs across a wide range of disciplines are seen as essential in fostering a collegial academic ethos, and in training the next generation of academics. They are a vital indicator to the research effort of institutions that seek to become and remain internationally competitive research-intensive institutions. For scholarly disciplines, they are the chief means by which those disciplines are preserved and fostered from one generation to the next. In some (but not all) disciplines, the PhD program is the powerhouse of research productivity. For governments and, to a lesser extent, by some elements of industry and society at large, they are broadly recognized as crucial to innovation and prosperity in an advanced knowledge economy, and to the solving of society's problems.

While the traditional concept is likely to remain at the core of any concept of the nature of the PhD in the future, the exponential growth of knowledge, growing global competition for highly skilled creative workers, and global reorganization of higher education, particularly in Europe, China and the US, have put continuous pressures for change on PhD programs. In a period of rapidly expanding knowledge, programs need to strike the right balance between highly specialised knowledge and generic skills that allow for ongoing individual intellectual growth. Competition for highly skilled workers able to contribute to innovation requires universities to make provision for employability skills above and beyond disciplinary expertise. Such employability skills will be just as essential to the future academic, who will face a transformed university sector with high demands made on it by society, as they are to graduates intending to work in industry and government. In addition, universities face the task of convincing a much wider section of industry and government than appreciate it at present of the crucial importance of research skills for future growth and for building problem solving capacity. They will need to adapt PhD programs to cater for such needs or risk making the PhD irrelevant to society's future needs. The increasing globalization of higher education, and competition between the traditional centres of excellence in the US, UK and other areas of Europe, and growth centres in Asia, provide Australian universities which have global aspirations with a major strategic challenge in positioning their programs and graduates competitively, and in forming strategic alliances. Most importantly, universities must work to improve the student experience in PhD programs and broaden its appeal. Completion and satisfaction rates, and student evaluations of the research culture in Australian universities including the University of Sydney are sub-optimal and must be raised.

In addition to its traditional role of adding to knowledge through published, peer-reviewed work, the PhD of the future will therefore need to place judicious emphasis on:

- meaningful development of the University of Sydney's graduate attributes at a level appropriate for doctoral study;
- greater opportunities for the development of professional skills relevant to future careers in higher education, research, industry and government;
- a wider range of opportunities for international engagement through increasingly globalised and high-level alliances;

- greater opportunities for engagement with industry and government; and
- a better, more appealing and stimulating student experience.

Meeting these challenges will require the University of Sydney to confront institution-wide issues relating to doctoral training to ensure that, in addition to highly-developed disciplinary expertise, future graduates will have the broad range of skills to adapt to the changing needs of the academy and society.

The University of Sydney's model for graduate training has traditionally been built around individual tutoring and supervision. The University will need to consider whether this model is adequate to meet the demands of the PhD in the future. A recent report of the European Universities Association noted that such a model accounted for only 22% of doctoral programs in Europe, with 29% of programs conducted through doctoral schools, and 49% conducted via a structure of taught courses in addition to individual supervision². Among the benefits of broader, cross-institutional models and courses were an improved and more stimulating research culture, clearer and more efficient administrative processes, reduced isolation, better mentoring and better shared understanding of research values and ethics. The report noted greater flexibility in admission, the growth of professional doctoral programs which embed research within reflective professional practice, and trends towards joint programs and greater mobility and portability between programs internationally.

In the United States, two projects by the Council of Graduate Schools are indicative of the priorities for reform:

- the PhD Completion Project (<http://www.cgsnet.org/Default.aspx?tabid=157>), a seven-year program to reduce wasteful attrition rates in US universities through scrutiny of admission, supervision, support, research culture, discipline-specific matters and a review and examination processes;
- Task force on Professional Doctorates reviewing doctoral training in preparation for non-academic careers³

China has witnessed remarkable rates of growth in the number of awarded PhDs, rising from completion figures of under 1000 PhDs per year in 1984 to close to 25,000 PhDs in 2004. In a period of twenty years China had moved from a position of being an insignificant player in the awarding of doctoral degrees to a situation where they were second only to the USA, having overtaken German, Japan and the UK. To foster further growth and achieve the standards of world-ranking universities, the Chinese government has funded an international scholarship scheme of 5000 state funded scholarships for students studying abroad, either as an enrolled doctoral candidate in an overseas university (3 – 4 year scholarship), or for students in jointly badged doctoral programs to spend up to 2 years in a leading non-Chinese university. By way of comparison, in 2008, 1303 students were funded in overseas doctoral programs, while more than double that number, 2753 were funded in jointly-badged programs. The popularity of the jointly-badged programs both among Chinese host universities and students, and the potential for collaboration and research that they open up, creates a significant opportunity for the University.

² David Crosier, Lewis Purser & Hanne Smidt, "Trends V: Universities shaping the European Higher Education Area" (EUA publications, 2007), 25 – 30.

³ Council of Graduate Schools, *Task force report on the Professional Doctorate* (CGS publications, 2008).

Such moves represent an international response to economic change, disciplinary evolution, and an enormous growth in demand for advanced skills. Among the challenges and questions facing the University of Sydney are:

- Is it possible to improve selection processes in a way that both maintains and/or increases the number of students but also improves attrition rates?
- What model for graduate study would best improve the research climate in which students work and do faculty-based or centralised graduate schools have a role in this?
- How can the University ensure effective development of graduate attributes and is there a role for more university-wide units and resources?
- How can the University best build disciplinary strength while simultaneously facilitating opportunities for creative interdisciplinary research?
- How can the University's resources best be used to improve support and resources for doctoral study?
- What mechanisms can be put in place to create improved opportunities for international partnerships, and professional and industry experience?

Development of a broad range of graduate attributes

The University's goal of producing graduates who will be future leaders and attain excellence in their career underpins the vision of the PhD at the University of Sydney. Achieving this vision requires identification of desirable attributes for our graduates, consistent with best practice in research training. It is envisaged that acquisition of such attributes will equip candidates with a wider range of skills, provide them with opportunities to enhance their academic and professional experience beyond their research capabilities, and prepare them for a variety of careers. Attention should therefore also be given to how these attributes might be developed.

Although some candidates may already possess the attributes listed below, for most candidates, attainment of these attributes and skills should be available through courses in which they are explicitly taught or developed during their research program. It is further recognized that not all attributes will be relevant to all candidates, disciplines, or workplaces. The attributes can be broadly categorized as either research or personal attributes, as delineated below.

Desirable **research attributes** to be attained by graduates include:

- the skills to recognise and validate problems
- original, independent and critical thinking, and the ability to develop theoretical concepts
- a knowledge of the context of their ideas
- an understanding of relevant research methods and techniques and their appropriate application within their research field
- the ability to critically analyse and evaluate their own findings and those of others
- awareness of the significance of issues relating to the rights of other researchers, of research subjects, and of others who may be affected by the research. These issues include: confidentiality, ethical issues, attribution, copyright, malpractice, ownership of data, the requirements of the Data Protection Act, and safety issues
- an understanding of the processes for funding and evaluation of research
- an understanding of the application of their research findings to academic or societal endeavours

- an ability effectively to manage projects through the development of a research proposal, setting of research goals, monitoring of progress, intermediate milestones and prioritisation of activities
- the capacity to design and execute systems for the acquisition and management of information through the effective use of appropriate resources and IT
- the capacity to present information clearly and effectively
- the ability to write clearly and in a style appropriate to the purpose
- an ability to construct coherent arguments and articulate ideas clearly to a range of audiences
- a capacity to promote the public understanding of their research

Desirable **personal attributes** to be attained by graduates include:

- personal and academic honesty and integrity, tolerance, respect for the ideas of others
- an ability to effectively support the learning of others in teaching, mentoring or demonstrating activities
- an ongoing commitment to the acquisition of knowledge and an ability to identify their own needs for further education and professional development
- an original, creative and innovative approach to research
- flexibility and open-mindedness
- self-discipline and motivation
- initiative and the ability to work independently, be thorough and self-reliant
- the capacity to develop and maintain co-operative networks
- an understanding of the impact of their behaviours on others when working in a team
- the capacity to listen, give and receive feedback and respond constructively to others
- insight into the transferable nature of research skills to other work environments and the range of career opportunities within and outside academia
- professional communication skills

Methods to achieve these attributes

Since it is expected that graduates will develop most of these attributes, the University needs to provide opportunities for their acquisition. Many supervisors will be able to facilitate the development of a selection of these attributes. However, it is not expected that each supervisor should have the knowledge, skills or resources to comprehensively address them all. It is therefore expected that the University will provide the resources to support candidates to develop these attributes.

Recommendation 1: That the University investigate the development of short courses to enable development of the desirable graduate attributes.

These courses could be developed by the Institute for Teaching and Learning and/or the Careers Centre, and should:

- (a) be University-wide short courses
- (b) include content related to:
 - (i) acquisition of the specified attributes listed;
 - (ii) development and management of a career;
 - (iii) how to build an effective network;
 - (iv) working within a team;
 - (v) general business management skills; and

- (vi) leadership skills
- (c) offered at flexible times, such as in the evening
- (d) be scheduled to roll out continuously throughout the year
- (e) be offered every year, with a known timetable
- (f) not be mandatory but be freely available and easily accessible to all
- (g) include delivery platforms which enable “off-campus” and part-time students to attend (eg. on-line courses)

2. ADMISSION

Introduction

Admission requirements are assumed to provide a triage that ensures selection of candidates who have sufficient ability to complete a PhD as defined at the University of Sydney. There is little evidence, however, on which to base decisions about quality of potential candidates. The aim of the University is therefore to ensure the inclusion of highly competent candidates from a broad range of backgrounds and who may have undertaken a variety of different paths to indicate research capacity.

All faculties were surveyed to establish methods by which they currently admit candidates into a PhD program. Faculties provided information on the normal qualifications accepted for direct entry, and information on alternative qualifications or attributes if applicants do not possess the normal qualification. Faculties were also requested to provide information about their normal practice if a candidate is considered to be insufficiently prepared to undertake the research program for which they have enrolled.

Normal entry requirements

Although there are differences between faculties, the typical entry to a PhD across the University is via a Bachelors degree with honours. In cases where an honours degree is required, most commonly both Class 1 and Class 2:1 honours awards are accepted. Normal entry for some faculties, particularly professional faculties, may alternately include completion of a coursework or research masters degree, evidence of professional development, or evidence of research capacity (such as conference presentations).

All faculties were silent on entry to a PhD from courses for which honours research programs are not offered. Of particular interest is entry to the PhD from the professional post-graduate entry-level degrees (for example in Dentistry, Health Sciences and Medicine) and selected combined degrees.

Recommendation 2: That a path for entry to the PhD program be established for high performing graduates of higher level courses that do not offer research honours components.

Other accepted qualifications

Some, but not all, faculties have alternate pathways to gain entry to the PhD. The most common alternate pathway is initial enrolment into a research masters degree, with an upgrade when research ability has been demonstrated. One faculty accepts candidates who have demonstrated research potential, and one faculty assesses applicants on a case-by-case basis. The Faculty of Education & Social Work has designed a specific alternate route, termed the “pathway admission”, for which applicants are required to submit a research proposal addressing criteria specified by the faculty, in addition to qualification requirements.

There are no available data to demonstrate successful completion by candidates who enter by alternate routes, and whether candidates progress at a different rate from those entering by the normal route.

Other considerations at enrolment

Scholarship eligibility

Satisfaction of research candidates has been shown to be related to support received through their candidature (e.g. Cullen et al 1994; Moses 1984). One means of support is to award a scholarship. If the University is to continue to grow PhD numbers, it is important that it continue to improve flexibility in the scholarship allocation scheme. Revisions to scholarship guidelines at the University of Sydney in recent years have given increased weight to indicators of research potential and have added a category to cater for professional candidates. It is essential that the effectiveness of such flexibility be monitored and if necessary reviewed to ensure appropriate support is available to all candidates with the best chances of completion including candidates enrolling via alternate routes.

Recommendation 3: That the method of awarding scholarships be monitored and reviewed, as appropriate, to reflect the variety of paths taken by highly competent candidates enrolling in a PhD.

Options for students considered insufficiently prepared for PhD studies.

All Faculties have strategies for supporting candidates who were considered to have insufficient background knowledge or skills to undertake the PhD in which they had enrolled. Several faculties have mandatory coursework as part of the PhD program, often, but not exclusively, in Research Methods. In other faculties, the supervisor and/or the postgraduate coordinator recommends that a candidate enrol in, or attend, a relevant unit of study or a training course offered within the University. In one faculty this is a mandated requirement for candidates needing further preparation.

The strategy of recommending that candidates undertake units of study offered by the University has been difficult to implement because fees are charged when enrolling in a faculty external to the home faculty. This practice of charging fees is necessary in the current University structure to support the teaching resources. However, it also provides a barrier to many candidates and impedes the University's aspiration of cross-disciplinary research and the establishment of a community of students.

Recommendation 4: That supplementary coursework and training opportunities be freely available and easily accessible to all PhD candidates, as required. Such supplementary studies should not be mandatory.

Resources available for candidature

One source of dissatisfaction and frustration for candidates is the lack of resources available to support their doctoral program. Currently, candidates can enrol in a research program that requires equipment that is not available, or that requires continued funding that is not guaranteed for the duration of their candidature. In such cases, the candidate is at risk of being unable to complete their studies.

Recommendation 5: That, prior to enrolment, the supervisory team and candidate ascertain the availability of all equipment and supporting infrastructure that the research project is likely to require. It is further recommended that, prior to enrolment or at an appropriate stage early in the development of the project, the supervisors, together with the candidate, prepare a budget as part of the research proposal, and prepare a statement concerning how they plan to support the research program.

3. COMMENCEMENT OF CANDIDATURE

Introduction

Effective induction of RHD candidates is essential to ensure candidates have the requisite knowledge to participate effectively and safely in the host department and research team. Induction also ensures that candidates are familiar with their responsibilities and rights, can easily access available resources and facilities, and develop collegial relationships with other academics and candidates in the host faculty/department. It may be useful in some faculties for candidates to undergo induction into the University, department and research group. In this way they can quickly learn the structure of the organization as well as specific requirements of the environment in which they will be undertaking their research. Doing so will assist candidates to make a rapid start to their research.

At the University, all faculties currently provide an induction for incoming students. The induction is generally not compulsory and the content, method of delivery and length varies considerably across faculties.

The Code of Practice

The *Code of Practice for Supervision of Postgraduate Research Students* outlines the responsibilities of the University, faculties, departments, supervisor and candidate in the supervision and administration of RHD programs, The *Code of Practice* notes the following responsibilities at the commencement of candidature:

1. Responsibilities at the University level

The University has the responsibility:

- 1.2 to ensure that candidates have an acceptable level of access to physical space and other facilities, including library facilities, and that departments advise prospective candidates of what facilities will be made available;

2. Responsibilities at the faculty or college level

The faculty or college has the responsibility:

- 2.6 to ensure that candidates within the faculty or college are aware of persons within the faculty or college to whom they can turn to for advice;

3. Responsibilities at the departmental level

The department has the responsibility:

- 3.3 to ensure that applicants are correctly advised as to the availability of facilities including access to physical space and other resources and are correctly advised as to the financial support that is likely to be available to them;
- 3.5 to ensure that the respective role of supervisor and associate supervisor is properly defined and understood and that they have access to information defining their responsibilities;
- 3.7 to ensure that candidates are provided with written information concerning departmental facilities and requirements including reference to arrangements for alternative channels of problem resolution and the various review mechanisms that operate within the department;

4. Responsibilities of the supervisor

The supervisor has a responsibility:

- 4.4.1 to ensure that the candidate is aware of the standards expected for the degree concerned and for identifying with the candidate the particular

- research skills that will need to be acquired and the most appropriate data-gathering and analysing techniques;
- 4.4.2 for reaching agreement with the candidate on the contact that will be necessary between them both in general terms and quite specifically for the first year of a PhD candidature or first semester of a master's candidature; this will include agreement upon indicators of progress being made and submission of appropriate written work, interim reports or research results. Written work is to be returned by the supervisor with constructive criticism within one month or a shorter agreed time;
 - 4.10.1 to identify the various degree and other administrative requirements and to advise the candidate as necessary; he or she should ensure that the necessary approvals are sought for absences from the University by the candidate and that the candidate receives any due entitlements from the department;
 - 4.10.2 to advise each candidate of applicable government and institutional guidelines for the conduct of research, including requirements relating to ethical approvals for studies on human or animal subjects, and the use of potentially hazardous agents; references should be made to the AV-CC Guidelines for Responsible Practice in Research and Dealing with Problems of Research Misconduct; as far as possible, research supervisors should ensure that the work submitted by candidates is their own and that data are valid;
 - 4.10.3 to ensure that the candidate is aware of the requirements regarding the retention of data within departments and the requirements of members of staff to complete a statement of authorship in respect of each paper submitted for publication;
 - 4.10.4 to ensure that safe working practices are developed and maintained and that the candidate is aware of the University's Occupational Health and Safety Policies.
 - 4.11 The supervisor has a responsibility, where an associate supervisor has been appointed:
 - 4.11.1 to ensure that responsibilities are clearly understood by all three parties and should maintain regular contact with the associate supervisor;
 - 4.17 The supervisor has a responsibility to ensure that the candidate is aware of his or her rights with respect to intellectual property and to encourage, where appropriate, the exploitation of such intellectual property through the University.

Responsibilities relating to the *induction process* are carried out in a number of ways. Induction activities currently take place both at a University-wide level, through the Office of Graduate Studies, and within faculties, departments and other units. Some standardisation of the induction process is required across the University in order to ensure that all RHD candidates are inducted, at commencement of their candidature, in accordance with the *Code of Practice for Supervision of Postgraduate Research Students* and to ensure that the obligations outlined in the code are being met at the various levels of University administration.

Recommendation 6: That there be a review by the SEG Research Training Committee of central and faculty-based induction processes with a view to identifying appropriate faculty and central responsibilities to best ensure efficiency and effectiveness. Faculties should carry out induction sessions at the start of each semester that ensure that:

- (a) candidates have been supplied with a local induction kit containing a map of the campus, information on the discipline/department and its processes, relevant committees and a list of staff significant to the workplace and their contact details;
- (b) candidates have received The University of Sydney “Services for Students” booklet and Postgraduate Studies handbook and have been made aware of learning and support organizations within the University including the Sydney University Postgraduate Representative Association (SUPRA);
- (c) OHS information and, where appropriate, training has been provided to candidates and has been read and understood by them. Such information should include emergency information, contact details of local OHS officers, the OHS website and relevant policies;
- (d) The candidate is made aware of administrative requirements within the department/faculty relating to their candidature, such as attendance, use of university vehicles, application for fieldwork, special duties and other leave;
- (e) Policies with respect to intellectual property, including questions of authorship and exploitation of inventions and other intellectual property, have been agreed.

The *scope of induction* varies between faculties. The Faculties of Dentistry, Medicine and Pharmacy require that a Postgraduate Research Student Induction Checklist be completed by the supervisor and candidate at the commencement of candidature. In many faculties and departments postgraduate handbooks and information booklets are used to introduce new candidates to the department and outline administrative requirements. In the Faculty of Education and Social Work an induction program is run as a series of seminars and candidates are also required to complete an induction checklist.

A mandatory Postgraduate Research Student Induction Checklist is one way to ensure that RHD candidates are made aware of the various policies and rules relevant to their candidature, and that faculties, departments and supervisors have advised candidates of the facilities, resources and support mechanisms available to them. Additionally, a Postgraduate Research Student Induction Checklist can be used to ensure that discussions regarding expectations of the supervisor and candidate have been conducted and that a research agreement has been negotiated (see Section 5, Progress and Review).

Recommendation 7: Supervisors and candidates complete a Postgraduate Research Student Induction Checklist within the first three months of candidature, and the completion of this checklist be confirmed by the Postgraduate Coordinator.

The checklist should include confirmation that:

- (a) a research agreement has been completed (see below);
- (b) expectations of the role of supervisor and candidate have been discussed;
- (c) the nature of the PhD and what is needed to complete an adequate thesis has been discussed;
- (d) the following policies have been read and discussed:
 - (i) Code of practice for supervision of postgraduate research students
 - (ii) Australian Code for the Responsible Conduct of Research

- (iii) Research: Code of Conduct for Responsible Research Practice and Guidelines for Dealing with Allegations of Research Misconduct
- (iv) Record Keeping Manual
- (e) arrangements for after hours access to buildings have been made if appropriate;
- (f) facilities and resources for the candidate, including office/laboratory space, computer, stationery supplies, telephone and email, have been organised;
- (g) the candidate has been introduced to colleagues within the department including the Head of discipline, Head of research area, appropriate administrative staff and other students in the research area;
- (h) ethics issues and the appropriate approval process have been identified;
- (i) any licenses, permits or permissions required to carry out the project have been identified along with the appropriate approval process.

Recommendation 8: That the current *Code of Practice for supervision of postgraduate research students* be updated to reflect changes to the administrative structure of the University, requirements that each candidate have *at least* one associate supervisor (and preferably more than one), and that the responsibilities of University, faculty, supervisor and candidate be revised in light of recommendations in this report.

Research Agreement

The pressure on completion times and high quality training has changed the research climate such that all candidates need to identify their research question early in the candidature. In most faculties, prior to enrolment, candidates identify supervisors and their broad research area. In most but not all faculties, candidates submit a formal research proposal prepared in collaboration with their agreed supervisor(s) as part of the enrolment process. In some research areas, however, the preparation of the research proposal constitutes part of the research program, and therefore is included as a confirmation milestone. The negotiated research agreement defines the expectations of both the candidate and supervisor(s) at the outset of the project and can be reviewed at annual progress reviews.

Recommendation 9: That within the first 3 months of candidature all candidates and supervisors negotiate a *research agreement* to facilitate the successful completion of the research degree.

Such agreements should:

- (a) be negotiated prior to the commencement of the candidature, or within three months of enrolment;
- (b) clarify the expectations of the role of supervisor(s) and candidate;
- (c) outline the frequency and nature of meetings between the candidate and the supervisor(s);
- (d) contain a mutually agreed work-plan and timeframe for completion of research;
- (e) contain a mutually agreed work-plan and timeframe for completion of writing;
- (f) detail the progress review and confirmation procedures the candidate will undergo;
- (g) include a discussion of the conventions with respect to publication of research outcomes;
- (h) be subject to review and, if necessary revision, at least annually.

Faculties could assist this process by providing potential candidates with templates of the agreement and a list of items/issues which should be considered.

Examples of Induction checklists

Sample induction checklists can be found at:

- (c) Faculty of Dentistry, Medicine & Pharmacy induction checklist:
http://www.foh.usyd.edu.au/postgrad/forms/induction_checklist.pdf
- (d) Information for postgraduate students – School of Physics:
http://www.physics.usyd.edu.au/pdfs/current/pgrad/new_pg_info.pdf
- (e) Research Integrity and the Responsible Conduct of Research – Checklist for Research Students and their Supervisors:
<http://www.gradresearch.unimelb.edu.au/docs/forms/Combined-MRO-SGS-checklist.pdf>

4. SUPERVISION

Candidate satisfaction and successful completion of doctoral studies are closely related to high quality supervision. While there are contemporary examples of outstanding supervisory practice in the University and University-wide awards for excellence in supervision, such practice is not universal, leading to cases of less than optimal candidate satisfaction, poor progress, slow completions and separations.

Underpinning the Working Party recommendations about supervision is the notion that:

Supervision should be conceptualised to encompass a broad view of PhD education which includes more than the one-to-one interaction of a student and a supervisor. (Cullen et al. 1994, p.108).

In a climate of increasingly interdisciplinary research it is essential that PhD candidates have access to advice and guidance from others in the faculty, the University and the broader community.

Characteristics of high quality, effective supervision are able to be generalised across all research disciplines. These characteristics relate to supervisory practice, managing expectations, student-supervisor interactions (including at the initial meeting), and to research climate.

Characteristics of good supervisory practice

In general, candidates advised by supervisory teams report higher rates of satisfaction than those with a sole supervisor (Cullen et al 2004). In addition, a good supervisor is reported to have appropriate disciplinary expertise and be interested and actively researching in the candidate's topic area, have sufficient time to devote to the candidate, ensure sufficient resources are available, be familiar with the University's processes and educational resources, identify early if help is required, provide timely feedback that identifies both where the work is going well and problem areas, and be able to provide strategies for resolution. Good supervisors are also able to vary their supervisory approach to suit individual student needs, and negotiate the move from dependence to independence through the candidature (Cullen et al 1994).

The changing nature of the PhD, however, has implications for the nature of supervision. The emerging expectations of the PhD, itself, including the expansion of outcomes from the candidature (such as acquisition of a broader range of professional attributes), suggests that it is no longer possible, or even desirable, for a candidate to be advised by a sole supervisor. Furthermore, there is evidence that sole supervision can be a major source of discontent (e.g. Moses 1984), possibly because reliance on a single advisor makes it more difficult to resolve issues related to personality factors, content expertise, communication difficulties, or a supervisor's heavy workload. An advisory panel is more likely to prevent such problems, particularly if the panel is carefully selected to include people with the requisite skills, knowledge and experience. It is further envisaged that such advisory panels would not be restricted to either a narrow content area, or necessarily to a single school or faculty. Whilst the University currently mandates that all candidates have at least one associate supervisor appointed, in many candidatures the involvement of this person is nominal and so the active involvement of the supervisory team in guiding the candidature should be encouraged.

Recommendation 10: That the structure for supervision at the University of Sydney be reconceptualised to establish the principle that candidates are supervised by a supervisory panel, consisting of a primary supervisor and one or more associate supervisors. Together, the team should:

- (a) be eligible to supervise candidates;
- (b) have content expertise in the area of the candidate's research;
- (c) have demonstrated experience in effective supervision;
- (d) be familiar with the University's processes and resources;
- (e) agree to provide timely feedback;
- (f) be able to identify problems early, and formulate appropriate remedial strategies;
- (g) be so structured that individuals do not normally take the role of primary supervisor for more than 5 candidates.

Professional development of supervisors

New supervisors are currently required to either undertake a course on supervision of RHD candidates offered by the Institute for Teaching and Learning or to undertake an "apprenticeship" alongside experienced colleagues to become eligible to assume the role of primary supervisor. Working with experienced colleagues allows observation of a range of skills and attributes required of supervisors that differ among individual candidates, and potentially differ according to research programs.

For experienced supervisors, the changing needs of PhD graduates, reflecting the need for a changing role for supervisors, is not always appreciated. For experienced supervisors who are new to the University, but who have successfully supervised candidates in other institutions and frequently in other countries, the new environment can provide unforeseen challenges. One way to overcome these problems is to provide short refresher courses or updates for experienced supervisors.

It is difficult to identify supervisors who are not adequately discharging their responsibilities. Most faculties at the University use the annual progress review to identify problems in supervision. In a few cases, smaller Faculties informally identify problems if the Associate Dean (or equivalent) can maintain close contact with candidates. If a pattern of supervisory problems is recognised, there are few effective ways currently available to intervene to provide support for further skill development.

Recommendation 11: That training of supervisors be mandatory. Different types of training should be available to address different needs, and should include:

- (a) ITL course for new supervisors, in addition to recommendation to work closely with experienced, effective supervisors;
- (b) effective, short induction courses provided for experienced supervisors new to the University of Sydney;
- (c) effective, short refresher courses provided for experienced supervisors at the University, allowing a simple means by which to maintain currency with changing University and Faculty procedures and expectations of the candidature;
- (d) effective staff development courses for supervisors who are having difficulty with their supervisory responsibilities. It is further recommended that the Associate Dean (or equivalent) for RHD candidates be given responsibility to ensure periodic review of quality of supervision.

Managing expectations of candidates and supervisors

Satisfaction is also higher when *expectations, roles and responsibilities* are identified early in the candidature. Expectations can be successfully managed by the candidate and supervisor reaching agreement about the frequency and form that interactions should take. The evidence suggests that successful candidatures are associated with frequent (at least fortnightly) interaction with supervisor/s, early submission of written work with timely feedback, which allows early identification of problems, and with planning a schedule for completion and for dissemination of findings (Harman 2003).

Recommendation 12: That regular meetings be required between supervisors and candidates. These meetings should take the following form:

- (a) candidate and primary supervisor meet at least once per fortnight, although these arrangements can be varied if agreed by both supervisor and candidate, (making due allowance for absences by student and staff member), with meeting of full supervisory panel at least every three months;
- (b) to enable the whole supervisory team to be regularly updated on progress, meetings should be face-to-face. In exceptional cases, meetings could take place via Skype, telephone conference or email e.g. if temporarily in isolated locations.

Research climate

Faculties have a responsibility to ensure that the research environment is adequate for the successful completion of the project. Thus faculties need to make certain that sufficient physical resources, training opportunities, support structures and intellectual environment are in place either within the Faculty or through University facilities and services.

The *research climate* is crucial to candidate satisfaction. In general, satisfaction is high when candidates are regarded as junior colleagues. This sense of belonging to the academic unit can be achieved in several ways, including engagement by candidates within a research team, providing teaching opportunities, and by engagement in the daily activities of the academic unit such as regular seminar attendance. Candidates are also generally more satisfied when adequate research support is available, such as through grants and scholarships, and report higher levels of dissatisfaction when they feel isolated (Moses 1984).

Recommendation 13: That the research climate be strategically enhanced by:

- (a) wherever possible ensuring that there is a concentration of students within research areas, and that no student is working in isolation; and
- (b) provision of teaching opportunities, or other work experience relevant to the candidature, to encourage engagement by the student in the life of the academic unit, and to establish collegial relationships with academic colleagues.

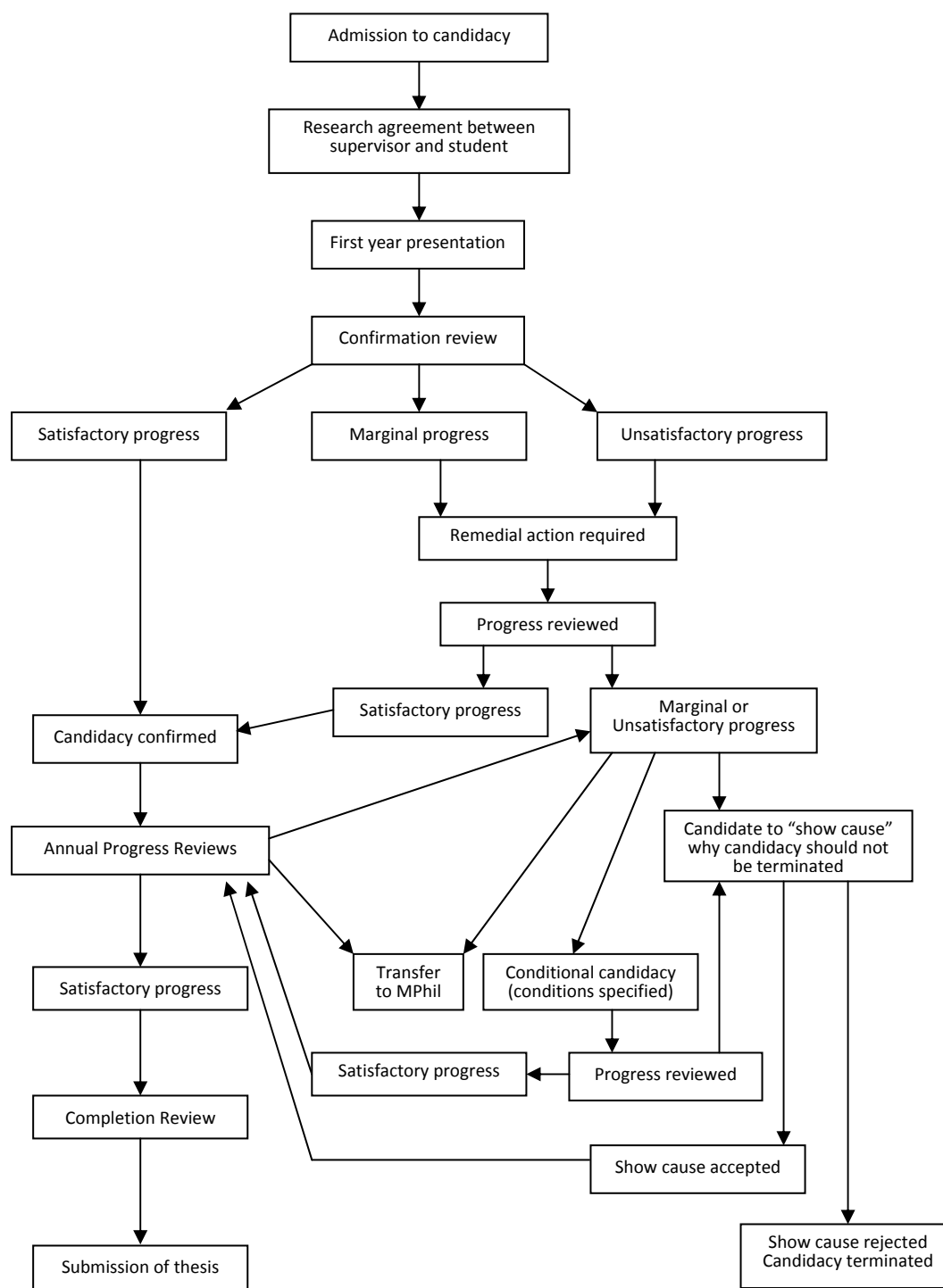
The Sydney University Postgraduate Representative Association (SUPRA) and the Council of Australian Postgraduate Associations (CAPA 2004) have previously developed advisory documents on policies on minimum resources available to postgraduate research students. These were discussed within the University in 2007 and broad consensus, subject to resolution of details, was reached that the University of Sydney should develop a new policy on resources for postgraduate higher degree research students, although such a policy has not yet been developed. Access to resources and work space on campus has been identified as a predictor of successful completion in research candidatures, and setting minimum resource standards is an important element in ensuring the quality of the research student

experience and in attracting the best research students to the University of Sydney. Such a move is consistent with recommendations currently being developed by the Group of Eight council of Deans and Directors of Graduate Studies and would bring Sydney University's policy framework into line with practice in all other Group of Eight universities. Such a policy could be either a stand-alone policy, or a statement within a broader policy on the management of research candidatures at the University of Sydney.

Recommendation 14: That the Academic Board, in consultation with the Senior Executive Group, develop a policy statement specifying the minimum resources available to research higher degree students. Such a policy should specify expectations in relation to provision of work space and storage, technical and IT support, communication resources, photocopying, library, postage, tearoom and other facilities, out-of-hours access, conference and research support, and should take due note of previous work by SUPRA and CAPA in this area.

5. PROGRESS AND REVIEW

The pathways through which candidates are reviewed may be summarised as follows:



The principles underlying review of candidates are:

1. The University's approach to supporting and monitoring candidates will be: equitable; consistent; procedurally fair; respectful of privacy; timely; and effective.
2. Faculties will ensure that they have clear and transparent internal processes for handling review procedures.

Confirmation of candidature

While the current process of annual reviews for all candidates has improved the monitoring of progress of their candidature, further improvements in this area can be achieved through a more structured approach to the reviews. The broad range of research at the University, together with the differences in the requirements of faculties and the skills level and experience of candidates entering doctoral programs, means that the review of research content and the definition of research milestones which need to be achieved, have to be tailored to specific disciplines/schools. The research agreement, negotiated at the outset of the project, is central to this more personalised review of each candidate's progress.

The current system of enrolling candidates for a probationary period after which their progress and likelihood of timely completion are reviewed has been implemented with varying degrees of rigour and success. It is proposed that the probation review be replaced with a more rigorous and structured process of confirmation. This will allow the preparedness of the candidate to be assessed as well as the suitability of the project for a PhD. In addition, it will provide the candidate with feedback on their performance and allow a program of additional study/preparation to be implemented, if necessary.

Recommendation 15: That all candidates continue to be enrolled on a probationary basis but at the end of the probation period they undergo a process of confirmation of candidature whereby their progress to date, project and proposed plan for completion, are critically reviewed.

Confirmation of candidature should:

- (a) be conducted after a minimum of one and a maximum of two semesters for full-time candidates and minimum of two and a maximum of four semesters for part-time candidates;
- (b) include review of research by academic staff other than the supervisors (that is, by a confirmation committee);
- (c) ensure that the candidate has met any conditions of enrolment and requirements outlined in the original research agreement;
- (d) require the candidate to provide whatever written and/or oral material has been specified by the discipline, faculty or school;
- (e) include a period during which the candidate can respond verbally to any issues raised by the confirmation committee;
- (f) provide the opportunity for candidates to raise concerns in a confidential and supportive environment in the absence of the supervisors;
- (g) reflect the graduate attributes of the University of Sydney;
- (h) include a written statement from the supervisor(s) about the candidate's knowledge and skills base and their application to the research project;
- (i) allow for the candidate to be required or recommended to undertake further study or training in particular areas;
- (j) be delayed for a maximum of one semester (full-time equivalent) if the candidate is deemed to be not sufficiently prepared (conditional candidacy) after which time the candidate is again reviewed and the candidacy confirmed or action taken to negotiate an alternative path or, in cases where the candidate has failed to meet specified requirements, to require the candidate to show cause why the candidature should not be terminated;
- (k) include provision for transfer to a Master of Philosophy or equivalent if either the candidate or project are deemed unlikely to allow successful completion in a timely manner.

Monitoring of candidature

For confirmed candidates the review process should be structured to better reflect the needs of the candidate, the requirements of the discipline, and the area of research. There should also be greater provision for input into the research from sources other than the supervisor(s). While it is important to focus the review on the quality and quantity of the research progress, there should also be opportunity for non-research issues (such as student welfare, faculty infrastructure and research climate) to be discussed.

Recommendation 16: That annual progress reviews should be mandatory for all candidates but the format of the review be made more flexible to allow for tailoring of requirements to address the learning needs of particular candidates and the research norms of a faculty, school or discipline.

Review of progress should:

- (a) include review of research by academic staff other than the supervisors;
- (b) be tailored to discipline and the stage of candidature;
- (c) include provision for the candidate, supervisor(s) or Postgraduate Coordinator to initiate a review of candidature at times other than the annual progress report;
- (d) allow for a candidate to be required to undertake courses or units of study as a condition of continued candidature where it is identified that they require further training in a specific area;
- (e) provide the opportunity for candidates to raise concerns in a confidential and supportive environment in the absence of the supervisors.

It is imperative that faculties use the feedback provided to them by research candidates to monitor and, where appropriate, improve the faculty's procedures, research environment and supervision practices of their staff.

Recommendation 17: That faculties use the annual progress reports to inform decisions about research training, infrastructure and implement changes where appropriate.

In particular faculties should;

- (a) use a synthesis of the information provided at annual progress reviews to monitor their performance in the area of research training and take steps to make improvements where appropriate;
- (b) ensure that all supervisors are familiar with the University's *Code of practice for supervision of postgraduate research students* and monitor the performance of supervisors in relation to this policy;
- (c) include assessment of supervision standards in PM&D evaluations to both reward successful supervisors and offer further training or support to those whose performance does not meet the standards of the faculty.

Annual Progress Reports

The current processes for the completion of annual progress reports are outdated and cumbersome. An online facility for the completion of structured and open responses from candidates, including the provision for confidential comments by both the candidate and supervisor(s), would streamline the process. It would also facilitate the collation of information received in a de-identified form to inform faculty decisions.

Recommendation 18: That a secure online reporting system be established to facilitate the annual review process.

Complaints Handling

While every effort should be made at the faculty level to effectively resolve complaints and disputes, it is recognised that in a small number of situations intervention or mediation by an external person or body is necessary.

Recommendation 19: That the University have in place written policy and procedures whereby a candidate's complaint(s) against a faculty or supervisor can be heard and resolved in a fair, private and timely manner.

Completion Review

In 2008, the majority of students (71.2%) who submitted a PhD for examination were required to make emendations to their work, 19.3% of students were asked to make minor corrections, and only 5.5% were awarded the degree with no further changes. While the category of emendations covers a range of issues, including the provision of additional, but relatively minor, information, it may also include the fulfilment of other conditions such as updating the literature review, alterations in the structure of a chapter and some of its content, and explanation or clarification of questions raised by examiners. It would be highly desirable for fewer theses to be awarded subject to emendations, and more to be awarded subject to minor correction or without further conditions. Recommendations to revise and re-submit or meet other conditions can be both stressful and time consuming for students, are administratively complex for staff, and can considerably delay the award of the degree.

One way of ensuring there are fewer recommendations for substantial changes to be made to a thesis or other conditions to be met before the award of the degree is for theses to have had their content and presentation assessed at a level of scrutiny representative of the examination process prior to submission. This should occur in sufficient time for the candidate to address issues raised in this process prior to the submission of their thesis. Such a completion seminar or completion review is among the group of quality measures identified as good practice by a colloquium of Deans and Directors of Graduate Schools in the Group of Eight universities.⁴

This pre-examination completion review could be achieved in a number of ways, such as:

- a completion seminar before a Faculty-based review panel;
- review of the thesis by internal or external expert reviewers, other than the supervisors;
- the publication of substantial amounts of the thesis in peer-reviewed journals.

This would result in making theses easier to examine as well as speed up the overall examination process. It would also result in fewer theses being subject to 'revise and re-submit' which, while only small in number (3.7% in 2008), are often extremely complex to evaluate, are stressful for students, and can substantially delay the award of the degree.

In the view of the Working Part, the first of the suggested options is the preferred method for achieving this goal supplemented by the other options as appropriate. The Faculty-based review panel which assesses this presentation could include both internal and external

⁴ The Group of Eight Limited, *Go8 Higher Degrees by Research Training*, August 2008.

expert reviewers, other than the supervisors, who can give students feedback on their work at this crucial stage of their candidature. The University of Melbourne, for example, requires all PhD students to make a completion presentation on their research prior to submission of their thesis for examination. This presentation is part of the requirements of a completion report that is submitted by all PhD candidates to the University's School of Graduate Research prior to proceeding to examination. Similar arrangements apply in several other Group of Eight Universities.

While the publication of a student's work in peer-reviewed journals is an important indication of the quality of their research, it does not necessarily indicate that the student's thesis is ready for submission as the papers that are published may represent only a part of the student's research and do not necessarily contain the whole argument presented in the thesis. Additionally, the readership of journal articles is different from the readership of a PhD thesis and often does not require that authors lay out the level of detail and argument in their text that is required of a doctoral thesis.

Recommendation 20: That the University require faculties to have in place a form of completion review, appropriate to the discipline, whereby all PhD students present their work to a Faculty-based review panel. This review should be structured to best accommodate disciplinary practice and should normally take place 3 to 6 months before the candidate's date of submission. It should be presented before a panel of reviewers who are able to give the candidate feedback on their work, other than just the candidate's supervisors and should be a pre-requisite for all students wishing to submit their thesis for examination.

Postgraduate Coordinators

Central to the success of the review process is the role of the Postgraduate Coordinator. This person is in a key position as they have an understanding of the local research environment, the norms for the discipline or faculty and the personnel involved. However, there is considerable variation in the seniority, authority and performance of Postgraduate Coordinators across the University. The Working Party has agreed that the role is frequently not appropriately valued, that there is little if any training for new appointees, no ongoing support for the role and that responsibilities are not always clearly defined.

To achieve the goal of better local monitoring of candidatures and to assist in attracting more senior and long-term staff to the role, Postgraduate Coordinators should be given appropriate recognition and responsibilities (including rebranding the name of the position to more adequately indicate its importance), be sufficiently senior to oversee the candidature of students and also the performance of supervisors in the department or school, and be adequately supported in the role.

Recommendation 21: That the current Postgraduate Coordinator position be replaced by *Director of Postgraduate Research* or something similarly-titled, and that persons filling this position be given training and support commensurate with their pivotal role in the monitoring and support of research candidates.

It is suggested that the Director of Postgraduate Research:

- (a) be an academic staff member at Level C or above with substantial experience in supervision to completion at the University;
- (b) have responsibility for oversight of the Annual Progress Review process and of local induction for candidates;
- (c) represent the school on appropriate committees;
- (d) undergo a formal induction process on appointment; and
- (e) be offered ongoing training.

Examinations and Quality Assurance

As a result of discussions arising from the Bradley Review of Higher Education⁵ and the Cutler review of innovation⁶ there has been increasing sector-wide discussion on how universities articulate standards and ensure the quality of outcomes of awards. The University of Sydney should aim to take a leading role in such discussions and should develop ways of articulating the standard of its PhD outcomes in a way that is consistent with its values of excellence and international aspirations. In articulating global aspirations for its research and research training, the University of Sydney should be able to provide evidence of the international standing of its research training outcomes.

Statements of outcomes, such as those proposed in the Australian government's recent discussion paper on reviewing the Australian Qualifications Framework⁷ are often only successful in articulating minimum standards and have limitations when applied to situations where there are high expectations of excellence. In addition to statements of outcomes, the University of Sydney may derive benefit from accumulating exemplars of outstanding work, which could form the basis for demonstrating standards to students, supervisors, examiners and the public. Such exemplars would provide a basis for ongoing collegial discussions of quality.

It is the practice of some Group of Eight universities and universities internationally to ask examiners to grade theses in four or five bands, calibrating the thesis against the best work internationally in the discipline. An advantage of such a system is that it would enable the University to make statements about the international quality of its awards based on evidence.

Recommendation 22: In order to provide evidentiary support to its aspirations to global standards, and to provide exemplars which would form the basis for ongoing discussion of PhD standards across the University it is recommended that a working party investigate:

- (a) an examination system in which examiners report the standing of the thesis against four or five bands calibrating the work against recent international work in the discipline;
- (b) a mechanism whereby examiners can nominate a small percentage of the best theses for an award, such as a Vice Chancellor's Outstanding PhD Thesis award.

⁵ *Review of Australian Higher Education: final report* (Department of Education, Employment and Workplace Relations, 2008)

⁶ *Venturing Australia, building strength in innovation*. (Department of Innovation, Industry and Research 2009)

⁷ Australian Qualifications Framework Council, *Strengthening the AQF: A Proposal*, May 2009.

Other procedural issues

Appointment of examiners and processing of examiners' reports

The current moves toward earlier appointment of examiners, and appointment of examiners appropriate to the research project, should be continued. This process would be improved, however, if the submission of the names of examiners to the PhD Award Subcommittee could be achieved online by means of an electronic form that does not allow the submission of the appointment form until all necessary fields have been completed.

The processing of examiners' reports would also be improved if these could be completed online. Examiners could still be sent a hard copy of the student's thesis but their report would be submitted online, much as many refereed journals now handle reviews of submissions. The online form would have a number of fields that need to be completed before the report can be submitted. This would ensure that the form that accompanies an examiner's report is fully completed, something that does not always happen with the current process and can cause delays in the recommendation of an outcome of the examination of the thesis.

Recommendation 23: That a process be developed whereby the Nomination of Examiners form and Examiners' reports are completed online.

Electronic holdings of completed theses

It is important for both students and the University that PhD students' work be as widely known as possible, and that it can be easily accessed and searched from outside the University. It should therefore be mandatory for all PhD students, before the award of their degree, to submit a PDF version of their thesis to the University Library. The Library should develop a process that makes it easy for students to comply with this requirement, and for people to access the thesis from outside the University. The Library would then be able to ensure that all University of Sydney PhD theses are included in the Australian Digital Theses Program (<http://adt.caul.edu.au/>) to further extend the exposure of the student's work.

Recommendation 24: That all PhD students be required to submit an electronic version of their thesis to the University Library before the award of their degree. The Library should develop processes that facilitate this submission and ensure that all of these are lodged with the Australian Digital Theses Program.

Availability of advice

Advice is often required by candidates to support research design and analysis and also for the preparation of the thesis, but is not routinely available. To ensure the conduct of high quality research and a thesis requiring no emendations, such advice should be readily available and freely accessible. Many candidates need access to advice on the optimal way to design projects to ensure the widest statistical validity and several Australian universities have established effective centralised statistics units to provide such research support

Recommendation 25: Advice on study design, statistical design and analysis and writing skills, specific to the candidate's area of research, be freely available and accessible to all candidates.

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Attachments

- Draft RHD Graduates attributes
- Extent of characteristics acquired during PhD and extent characteristics been important in work (from *PhD Graduates 5 to 7 Years Out: Employment Outcomes, Job Attributes and the Quality of Research Training*, University of Queensland Social Research Centre, August 2007, p.31).

ATTACHMENT 1

RHD GRADUATE ATTRIBUTES

Draft for PhD Review Working Party

PREAMBLE

The University of Sydney aims to identify and implement best practice in research training. Our RHD programs seek to prepare graduates for a variety of careers by equipping them with a wide range of skills and providing them with opportunities to enhance their academic and professional experience beyond their research capabilities. We endeavour to produce graduates who attain excellence in their career and will be future leaders. The University recognises that the attributes listed may be present on commencement of the program(s), explicitly taught, or developed during the course of the study.

RESEARCH SKILLS

RHD graduates should have:

- the skills to recognise and validate problems
- original, independent and critical thinking, and the ability to develop theoretical concepts
- a knowledge of the context of their ideas
- an understanding of relevant research methods and techniques and their appropriate application within their research field
- the ability to critically analyse and evaluate their own findings and those of others
- awareness of the significance of issues relating to the rights of other researchers, of research subjects, and of others who may be affected by the research. These issues include confidentiality, ethical issues, attribution, copyright, malpractice, ownership of data and the requirements of the Data Protection Act, and safety issues
- an understanding of the processes for funding and evaluation of research
- an understanding of the application of their research findings to academic or commercial endeavours
- an ability effectively to manage projects through the development of a research proposal, setting of research goals, monitoring of progress, intermediate milestones and prioritisation of activities
- the capacity to design and execute systems for the acquisition and management of information through the effective use of appropriate resources and IT
- the capacity to present information clearly and effectively
- the ability to write clearly and in a style appropriate to the purpose
- an ability to construct coherent arguments and articulate ideas clearly to a range of audiences
- a capacity to promote the public understanding of their research

PERSONAL ATTRIBUTES

RHD graduates should have:

- an ability to effectively support the learning of others in teaching, mentoring or demonstrating activities
- an ongoing commitment to the acquisition of knowledge and an ability to identify their own needs for further education and professional development
- an original, creative and innovative approach to research
- flexibility and open-mindedness
- self-discipline and motivation
- initiative and the ability to work independently, be thorough and self-reliant
- the capacity to develop and maintain co-operative networks

- an understanding of the impact of their behaviours on others when working in a team
- the capacity to listen, give and receive feedback and respond constructively to others
- insight into the transferable nature of research skills to other work environments and the range of career opportunities within and outside academia
- professional communication skills

ATTACHMENT 2

(from *PhD Graduates 5 to 7 Years Out: Employment Outcomes, Job Attributes and the Quality of Research Training*, University of Queensland Social Research Centre, August 2007, p.31).

Figure 14: Extent characteristics acquired during PhD and extent characteristics been important in work

