

AGENDA ITEM 12

Report of the Learning and Teaching Committee

12.2 Report of the Learning and Teaching Committee meeting held on 19 March 2008

The Committee met on 19 March 2008 when there were present: The Chair (Associate Professor G Ryan) presiding, Professors D Armstrong, B Sutton, Associate Professors D Airey, S Barrie, C Collyer, M Freeman, P McCallum, Drs C Asmar, D Collins, S Cumming, D Field, C Groenlund, J Jones, A Rubino, R Saunders, C Taylor, Ms K Barnsley, Mr A Cooper (for B Meikle), Mr J Saurine and Ms P Stevens (for S Hanfling). Ms A Griffiths was in attendance.

12.2.1 Revision to Academic Board Policy, *Establishment and Award of Scholarships and Prizes*

pages F3-F7

Mr Simon French from the Scholarships and Prizes Office spoke to proposed changes to the Establishment and Award of Scholarships and Prizes (2000). These changes have been recommended by the Scholarships FlexSIS Working Party and were explained to be largely of a technical nature. They include:

- reflecting the title and responsibility changes in senior academic positions that have occurred since 2000. For example, remove references to Pro Vice-Chancellors (College), change PVC (Research) to DVC (Research), and change the DVC (Academic & International) to Provost;
- reflecting the post-2000 split between Research Office and Scholarships & Prizes Office and their respective responsibilities;
- inserting reference to the new responsibilities for recording scholarships on FlexSIS (see paragraphs 5.1.2.3 and 5.2.2.3); and
- paragraph 11.1 has been amended to reflect the subsequent Academic Board policy *Scholarships* (2005).

Recommendation

That the Academic Board amend the policy, Establishment and Award of Scholarships, as detailed in the report presented.

12.2.2 Academic Board Phase Three Faculty Review Reports

F8-F64

Reports of the Academic Board Review Phase 3 were received for the Faculty of Agriculture, Food and Natural Resources, the Faculty of Engineering and Information Technologies and the Faculty of Science.

Special mention was made of the Faculty of Engineering and Information Technologies' help in the review process, as the first faculty to be reviewed. The process was reported as problematic for the faculty as, in the beginning, it was unclear what the focus of the review should be. The Faculty had written and then re-written its report. Despite initial hurdles the process was reported to be a worthwhile one.

For Agriculture, Food and Natural Resources, the process had drawn attention to the close links between faculties. The faculty welcomed the collegiality of the review experience.

For Science, the process highlighted the strengths of its different schools. Unfortunately the timing of the review of Science (undertaken during November/December) had meant that they were unable to include more input from students.

SUPRA commended the amount of student consultation contained in the reviews. Concerns were expressed over some recommendations contained in reports that

referred to increasing market share. SUPRA commented that corporate interests should not be put before the goal of delivering good academic programmes.

(1) Faculty of Agriculture, Food and Natural Resources *pages F8-F27*

The Board is asked to note that the Committee received and noted the Final Report and Recommendations from the Academic Board Phase Three visit to the Faculty of Agriculture, Food and Natural Resources.

Recommendation

That the Academic Board note the report of the Phase Three Academic Board Faculty Review of the Faculty of Agriculture, Food and Natural Resources.

(2) Faculty of Engineering and Information Technologies *pages F28-F45*

The Board is asked to note that the Committee received and noted the Final Report and Recommendations from the Academic Board Phase Three visit to the Faculty of Engineering and Information Technologies.

Recommendation

That the Academic Board note the report of the Phase Three Academic Board Faculty Review of the Faculty of Engineering and Information Technologies.

(3) Faculty of Science *pages F46-F64*

The Board is asked to note that the Committee received and noted the Final Report and Recommendations from the Academic Board Phase Three visit to the Faculty of Science.

Recommendation

That the Academic Board note the report of the Phase Three Academic Board Faculty Review of the Faculty of Science.

12.2.3 Proceedings of the Committee

(1) Report from the Deputy Provost (Learning and Teaching) & Pro Vice-Chancellor

It was reported that all faculties have now submitted Learning and Teaching Plans. The Associate Deans group is working on action plans with faculties. They are aiming to agree on two – three action points, as a kind of contract between Provost and Faculties. These are still to be finalised. Working with ITL and setting clear targets.

(2) Other Reports

The Committee also:

- received a presentation from Professor Peter Goodyear, Carrick fellow and co-director of the Centre for Research on Computer Supported Learning and Cognition (CoCo) on the Pedagogy of Deep Learning;
- agreed to examine the Academic Board's *Guidelines to Good Practice in Teaching and Learning*, with a view to updating and amending where necessary;
- noted the report of the Chair; and
- noted the report of the Academic Board meeting held on 27 February 2008.



The University of Sydney

Establishment and Award of Scholarships and Prizes

Approved by: Academic Board on 15 March 2000
Date of effect: 16 March 2000
Amended by Academic Board on 16 April 2008

1. Policy

The Academic Board's policy for the establishment and award of prizes and scholarships for academic proficiency in the University is based on the following principles:

- 1.1 The acceptance of an offer to establish a gift or a prize is a solemn undertaking by the Senate of the University.
- 1.2 Senate has delegated authority to accept gifts to the Vice-Chancellor, and Deputy Vice-Chancellors ~~and Pro-Vice-Chancellors (College)~~. This delegation of authority is not marked with an asterisk *; the delegate is, therefore, permitted to authorise another person to exercise his or her delegation (or any part of it) as an agent.
- 1.3 Senate has delegated to the Academic Board the authority to:
 - 1.3.1 award all prizes, scholarships and fellowships and other awards;
 - 1.3.2 determine the terms and conditions of awards established within the University, either by donation or bequest, in accordance with any terms of the gift and following acceptance of the offer by the Senate.
- 1.4 The Academic Board carries out this delegation by:
 - 1.4.1 publishing the policies which guide the drafting of terms and conditions, and any revisions thereof, and
 - 1.4.2 in consultation with the Provost ~~Deputy Vice-Chancellor (Academic and International)~~, identifying the responsibilities of the parties involved in considering offers of awards, accepting awards, determining the terms and conditions of awards in accordance with any terms of the gift, making awards and reporting on the procedural framework to the Academic Board and Senate.
- 1.5 The policy incorporates all earlier resolutions of the Academic Board and clarifies all relevant delegations of authority pertaining to the establishment and award of scholarships and prizes.

2. Acceptance of Gifts

The Vice-Chancellor, and Deputy Vice-Chancellors ~~and Pro-Vice-Chancellors (College)~~ have a delegation from the Senate to accept gifts and corporate sponsorships and are permitted to authorise another person to exercise this delegation (or any part of it) as an agent.

3. Role of the Academic Board

The Academic Board has delegated authority from the Senate to:

- 3.1 determine the terms and conditions of awards, scholarships and prizes established within the University, either by donation or bequest;
- 3.2 determine the policies and procedures which govern the award of all prizes, scholarships, fellowships and other awards in the University.

4. Factors to be Taken into Account in Establishing Awards

The following factors shall be taken into account when considering offers to establish awards:

- 4.1 that the award observes the spirit of anti-discrimination legislation;
- 4.2 that the University administers the award, including selection of the successful applicant;
- 4.3 that the conditions of award are determined by the University within the donor's general terms of reference;
- 4.4 that a postgraduate scholarship or fellowship be tenable for a sufficient period of time to enable a holder to make substantial progress towards the degree in which the holder is enrolled;
- 4.5 that continuance of a prize, scholarship or fellowship is assured for a minimum period of time;
- 4.6 that the value of a postgraduate scholarship or fellowship which is intended to provide a living allowance is such that the holder is not under pressure to supplement the stipend with part-time earnings;
- 4.7 that the value of a prize or undergraduate scholarship is sufficient to make a reasonable contribution towards the cost of a student's books and/or equipment;
- 4.8 that the field in which a scholarship or fellowship may be held is not unduly narrow;
- 4.9 that any progress report required of a scholarship or fellowship holder is subject to the approval of the University and not of the donor;
- 4.10 that any decision as to whether a scholarship or fellowship holder's work justifies renewal of the award is subject to the approval of the University which may, if the merits of the circumstances so dictate, consult with the donor;
- 4.11 that any restrictions on the publication of the results of a postgraduate scholarship or fellowship holder's work be consistent with current University policy;
- 4.12 that in creating new scholarships and prizes, due consideration be given to possible adverse effects of the proposed scholarships on recruitment into cognate disciplines.

5. Creation of and Amendments to Established Scholarships and Prizes

5.1 Undergraduate and Postgraduate Coursework

5.1.1 University-Wide Scholarships and Prizes

The ~~Research and Scholarships & Prizes~~ Office, reporting through the Pro-Vice-Chancellor (Learning and Teaching and Learning), is responsible for:

- 5.1.1.1 consideration of offers to establish University-wide prizes, scholarships and bursaries, either by donation or bequest, taking into account advice of any departments and faculties concerned, and acceptance of such offers in accordance with his/her delegated authority;
- 5.1.1.2 determination of the terms and conditions of award of such prizes and scholarships and bursaries, including the amendment of such terms and conditions, in accordance with any policies established by the Senate or the Academic Board;
- 5.1.1.3 reporting to the Academic Board on such policy matters relating to prizes and scholarships as may be referred to the ~~Research and Scholarships & Prizes~~ Office or the Pro-Vice-Chancellor (Learning and Teaching and Learning).

5.1.2 Faculty, School or Departmental Scholarships and Prizes

The relevant dean is responsible for:

- 5.1.2.1 consideration of offers to establish undergraduate and postgraduate coursework faculty, school or departmental

prizes, scholarships and bursaries, and acceptance of such offers in accordance with his/her delegated authority;

5.1.2.2 determination of the terms and conditions of award of such prizes and scholarships and bursaries, including the amendment of such terms and conditions, in accordance with any policies established by the Senate or the Academic Board;

~~5.1.2.3 notification to the Research and Scholarships immediately upon the establishment of a new award or revision of conditions of an existing award.~~

5.1.2.3 recording the establishment of a new award or revision of conditions of an existing award on the FlexSIS record system. The Scholarships & Prizes Office will confirm whether the award meets University policies before the new or revised award becomes active.

5.1.3 The Pro-Vice-Chancellor (Learning and Teaching and Learning) will provide an annual report, to be prepared by the Research and Scholarships & Prizes Office, to the Academic Board on all new undergraduate and postgraduate coursework awards and revised conditions to such awards and on any problems encountered in the administration of such awards.

5.2 **Postgraduate Research**

5.2.1 **University-Wide Scholarships and Prizes**

The Research and Scholarships Office, reporting through the Deputy Pro-Vice-Chancellor (Research), is responsible for:

5.2.1.1 consideration of offers to establish University-wide postgraduate research prizes, scholarships and bursaries, taking into account advice of any departments and faculties concerned, and acceptance of such offers in accordance with his/her delegated authority;

5.2.1.2 determination of the terms and conditions of award of such prizes and scholarships and bursaries, including the amendment of such terms and conditions, in accordance with any policies established by the Senate or the Academic Board;

5.2.1.3 reporting to the Academic Board on such policy matters relating to prizes and scholarships as may be referred to the Research and Scholarships Office or the Deputy Pro-Vice-Chancellor (Research).

5.2.2 **Faculty, School and Departmental Scholarships and Prizes**

The relevant dean is responsible for:

5.2.2.1 consideration of offers to establish postgraduate research faculty or departmental prizes, scholarships and bursaries, and acceptance of such offers in accordance with his/her delegated authority;

5.2.2.2 determination of the terms and conditions of award of such prizes and scholarships and bursaries, including the amendment of such terms and conditions, in accordance with any policies established by the Senate or the Academic Board;

~~5.2.2.3 notification to the Research and Scholarships immediately upon the establishment of a new award or revision of conditions of an existing award.~~

5.2.2.3 recording the establishment of a new award or revision of conditions of an existing award on the FlexSIS record system. The Research Office will confirm whether the award meets University policies before the new or revised award becomes active.

5.2.3 The Deputy ~~Pro~~-Vice-Chancellor (Research) will provide an annual report, to be prepared by the Research and Scholarships Office, to the Academic Board on all new postgraduate research awards and revised conditions to such awards and on any problems encountered in the administration of such awards.

6. Authority to Award Scholarships and Prizes

6.1 University-Wide Scholarships and Prizes

University-wide scholarships or prizes will be awarded by the Academic Board or some other body within the University, as specified in the scholarship or prize conditions. Where responsibility for awarding a scholarship or prize is not so specified:

6.1.1 the Pro-Vice-Chancellor (Learning and Teaching ~~and Learning~~) has authority to award ~~undergraduate~~ University-wide undergraduate and postgraduate coursework scholarships or prizes;

(b) the Deputy ~~Pro~~-Vice-Chancellor (Research) has authority to award ~~postgraduate~~ University-wide postgraduate research scholarships or prizes.

6.2 Faculty, School and Departmental Scholarships and Prizes

Faculty, School or Departmental scholarships or prizes will be awarded by a body within the University as specified in the scholarship or prize conditions. Where responsibility for awarding a scholarship or prize is not so specified:

6.2.1 the head of the responsible unit has authority to award faculty, school or departmental scholarships or prizes for which applications are not required;

6.2.2 the relevant dean has authority to award faculty, school or departmental scholarships or prizes for which applications are required.

7. Non-Established Scholarships

Scholarships are from time to time created within the University through faculty or departmental funds, external sponsorship or research grants. Such scholarships are awarded under the following conditions:

7.1 A scholarship shall be awarded on the basis of academic merit.

7.2 A scholarship shall be awarded by the Head of Department or School most concerned.

7.3 The value and duration of a scholarship may be recommended by the Head of Department or School. In determining the value of a scholarship, the Head will take into account:

7.3.1 availability of funds, and

7.3.2 the general level of the value of scholarships offered by the University.

7.4 A scholarship may provide allowances if the Head of Department or School so recommends, subject to the availability of funds.

7.5 All non-established scholarships must be advertised.

8. Special conditions for postgraduate scholarships

8.1 The object of each scholarship is to promote and encourage postgraduate research within the University of Sydney.

8.2 Awards shall be granted to graduates who are eligible for admission to candidature for a higher degree by research and who enrol accordingly as full-time candidates.

8.3 A scholarship shall be tenable for one year in the first instance but subject to satisfactory progress may be renewed for a second year and in the case of a PhD candidate for a third, and in special circumstances, a further six months.

8.4 A scholarship may be renewed subject to:

8.4.1 progress satisfactory to the Head of Department or School, and

8.4.2 availability of funds.

- 8.5 The holder of a scholarship shall acknowledge the donor of the funds in any publication arising out of the research.

9. Travelling Scholarships

- 9.1 All candidates for travelling scholarships shall be graduates or graduands of the University of Sydney who are of no more than four years' standing from qualifying for their final undergraduate degree.
- 9.2 The scholarships shall be awarded only when the proposed course of study overseas is related to at least one of the undergraduate degrees of the candidate.
- 9.3 All candidates shall be citizens or permanent residents of Australia.
- 9.4 Candidates who have previously held awards designed to promote postgraduate study overseas and which offer similar benefits to travelling scholarships shall be ineligible for consideration, unless exceptional circumstances apply.
- 9.5 The scholarships shall normally be awarded to enable scholars to undertake studies or research in some place or places overseas approved by the Academic Board.
- 9.6 The scholarships shall not normally be held for longer than one year unless the holder is enrolled for a higher degree. A scholarship shall not be renewed for a third year unless the holder is a candidate for the degree of Doctor of Philosophy and renewal shall be subject to satisfactory progress.

10. Bursaries

- 10.1 The bursaries at the disposal of the University have been created by private foundations. The capital sums are held in perpetuity with the bursary funded from the income from interest on the capital. The bursary or bursaries shall normally be awarded for an undergraduate degree course. Unless otherwise specified, the bursaries are tenable in any faculty.
- 10.2 All students of the University who shall, during their course, have received bursaries or exemptions from fees are invited by the Senate to make returns to the University, when their circumstances in life shall permit, for the purpose of conferring like benefits on future students. The names of all students making such returns will, if so desired, be published.

11. Number of Scholarships Which May be Held

- 11.1 ~~An undergraduate student is not allowed to hold at any one time more than two scholarships awarded on the basis of performance at the HSC Examination~~ will usually only hold one primary scholarship in any given year, except with the approval of the Pro-Vice-Chancellor (Learning and Teaching and Learning), who will take into account the value and duration of the awards concerned.
- (2) A postgraduate student may hold no more than one scholarship providing a living allowance although this may be held with a scholarship providing a supplementary allowance, unless otherwise permitted by the Deputy Pro-Vice-Chancellor (Research) who shall take into account the value of the awards and their purposes.

Academic Board Review Phase 3: Faculty of Agriculture, Food and Natural Resources

SECTION I PREFACE

1. Background
2. The Review Process
3. Membership
 - 3.1 Review Team
 - 3.2 Senior Faculty representatives
 - 3.3 Students

SECTION II CONCLUSIONS

1. Introduction to Findings
2. Commendations
3. Affirmations
4. Recommendations

SECTION IV REPORT

1. LEADERSHIP
2. STRATEGIC PLANNING
3. STUDENT AND STAKEHOLDER FOCUS
4. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT
5. WORKFORCE FOCUS
6. ACADEMIC PROCESS MANAGEMENT

SECTION I PREFACE

1. Background

The Academic Board reviews are intended to encourage an academic culture within faculties that values scholarship, free inquiry, intellectual rigour and honesty, supporting, in turn, the development and maintenance of high standards of teaching, scholarship and research.

The focus of Phase 3 Review of the Academic Board's reviews is to encourage and assist faculties to reflect on the key elements and processes of their academic environments and culture, and formulate ways in which these can be improved. The Review is based on the Faculty's Self-Evaluation Report (SER), which provides an overview of the Faculty's assessment of its culture and processes and their success in effecting continuous quality improvement. To guide the development of the SER, faculties were invited to address criteria adapted from the Baldrige Education Criteria for Performance Excellence 2007.

2. The Review Process

The Faculty of Agriculture, Food and Natural Resources presented its SER to the Academic Board on 3 September 2007, along with a number of supporting documents and relevant data. The Review Team met on 14 September 2007 to consider these materials.

The Review Visit took place on September 17 2007. The key purpose of the visit was to enable the Review Team to assess the robustness and validity of the Faculty's judgements.

3. Membership

3.1 Review Team

Associate Professor Peter McCallum, Chair
Professor John Christodoulou, Faculty of Medicine
Professor Elizabeth Cowley, Faculty of Economics and Business
Professor Frank Nicholas, Faculty of Veterinary Science
Dr Susan Thomas, Faculty of Arts
Professor Keith Trigwell, Institute for Teaching and Learning (Observer)

3.2 Senior Faculty representatives

Professor Les Copeland, Dean
Dr Lindsay Campbell, Discipline Leader (Sciences)
Professor David Guest, Associate Dean (Undergraduate Studies)
Dr Michael Harris, Discipline Leader (Agricultural and Resource Economics)
Professor Ivan Kennedy, Associate Dean (Research)
Professor Alex McBratney, Pro-Dean
Professor Peter Sharp, Director, Plant Breeding Institute
Professor Richard Trethowan, Professor of Plant Breeding

3.3 Students

The Review Team met with two groups of students: eight undergraduate students; and eight research higher degree students, together with one postgraduate coursework student (as there were insufficient numbers of postgraduate coursework students, this student joined the postgraduate research group for the purposes of the meeting).

SECTION II CONCLUSIONS

This section summarises the main findings and lists the commendations, affirmations and recommendations of the Review Team. It should be noted that, in addition, other favourable comments and suggestions for improvement are mentioned throughout the text of the Report. The report draws on the information provided in the Self-Evaluation Report as well as discussion with staff and students. In some places, text from the Self-Evaluation Report has been incorporated directly into the text.

1. Introduction to Findings

The Faculty's academic focus is the science and economics of the agri-food and fibre sector, the natural resources involved in that sector, and agribusiness. Research and teaching are delivered from three distinct disciplinary groups: Agricultural Science, Agricultural and Resource Economics and the Plant Breeding Institute.

The Faculty has a national and international reputation in research across all of these disciplines, and its research centres, the Plant Breeding Institute, the Australian Centre for Precision Agriculture and the SUNFix Centre for Nitrogen Fixation, operate at the leading edge of research internationally. The Faculty also contributes to several Cooperative Research Centres.

The Review Team found that both staff and students experienced the benefits of a strong learning community in the Faculty within an environment of demonstrated research-led teaching.

The Self-Evaluation Report and discussions with staff and students during the Review Visit brought out a number of issues and/or areas of concern which are addressed further within this Report. These issues may be summarised as follows:

1. The Faculty has an admirable emphasis on quality and on sustaining and enhancing existing strengths. The Review Team felt, however, that it would be worth considering whether, in the current climate, more ambitious aspirations and a more proactive strategy for achieving them might now be more beneficial for the next phase of the Faculty's development. There could be benefits in defining aspirations more clearly in some areas (in postgraduate coursework programs, for example, where current enrolments are very low (35 students in 2007)).
2. The Review Team was of the view that there may be opportunity for the Faculty to position itself better, particularly in the light of the increasing importance to Australia of the research and training it provides in areas of strategic national importance, including climate change. It is important that the Faculty develop a focused development strategy aimed at strengthening local and international student recruitment.
3. There are ongoing implications arising from the transfer of Animal Science training to the Faculty of Veterinary Science, with the establishment of the Bachelor of Animal and Veterinary Bioscience (BAnimVetBioSci) degree, which need to be addressed.
4. The Faculty could benefit from an increased focus on the development of its international networks.
5. Recent changes in the University's and Sydnovate's approach to contract negotiation is impeding access to research funding from primary industry and, in some cases, jeopardizing existing negotiations.
6. The poor standard of some of the Faculty's Camperdown campus facilities is a cause for concern.

A summary of Commendations, Affirmations and Recommendations follows. It should be noted that these are not prioritised by the Review Panel: they are listed in the order in which the relevant issues appear in the SER.

2. Commendations

Areas where the Academic Board commends the practices of the Faculty are as follows:

1. The Academic Board commends the Faculty on taking a broader view in allowing a significant proportion of its load to be taught outside the Faculty.
2. The Academic Board commends the Faculty for its commitment to growing research student numbers and encourages the Faculty to develop strategies (in line with the recommendations on marketing, recruitment and international networks) that will enable it to continue to do so.
3. The Dean and senior leaders are commended for fostering an open and inclusive leadership and communication style within the Faculty.
4. The Academic Board commends the Faculty for the effort it has made to make students feel part of the academic community within the Faculty.
5. The Academic Board commends the Faculty for the mechanisms it has in place to ensure that feedback on undergraduate units of study is implemented and that advice on any such implementation is provided to students as soon as feasible.
6. The Academic Board commends the Faculty for its financial support to new staff to attend international conferences.
7. The Academic Board commends the Faculty for the strategies it has in place to embed graduate attributes in units of study and to inform students of this process.
8. The Faculty is commended for its explicit and effective use of research-led teaching in its coursework programs.

3. Affirmations

Areas where the Academic Board affirms the Faculty's identification of the need for improvements to its practices are as follows:

1. The Academic Board encourages the Faculty to follow through on its intention to develop courses within areas of its expertise which would be of broad interest across the University, such as the environment, climate change and sustainability in order to enrich the University's general curriculum and compensate for the load loss it experiences in allowing its students significant study opportunities in other faculties.
2. The Academic Board affirms the need for the Faculty to develop curricula with an emphasis on food production and supply, such issues being central to the future of humanity, as a strategy for attracting new cohorts of students to its degrees and units of study.
3. The Academic Board affirms the need for mechanisms to be developed to enable greater collaboration between the Faculty and the Faculty of Veterinary Science so that students have more options to take Animal Science units of study as part of the Bachelor of Science in Agriculture (BScAgr) degree, while minimising the negative impact on Faculty EFTSUs.

4. The Academic Board affirms the Faculty's identification of the need for further work to be done with alumni and the rural community.
5. The Academic Board affirms the Faculty's commitment to the development of a more formal staff mentoring program and recommends that such a program focus on teaching, provided the Faculty is satisfied that good research mentoring is available through an individual's research group.
6. The Academic Board affirms the Faculty's commitment to the development of a more formal induction process for new staff including the production of an Induction Manual.
7. The Academic Board affirms the Faculty's intention to proceed with planning for a centralised research building.

4. Recommendations

Areas where the Academic Board recommends improvements to the practices of the Faculty are as follows:

1. The Academic Board recommends that the Faculty consider its committee structure to see where efficiencies might be made that would help to address the issue of workload.
2. The Academic Board recommends that the Faculty give high priority to the development of an effective marketing strategy, to target both local and international students.
3. The Academic Board recommends that the Faculty consider how it might develop more proactive strategies to develop and, where appropriate, to raise its academic aspirations. A mechanism for this might be for the Faculty to establish an Advisory Board, with wide industry representation and an external chair, as a focus for stakeholder involvement in future strategic planning.
4. The Academic Board recommends that the Faculty review its strategies for addressing student recruitment issues, consider reviving its media campaign and consider a coordinated plan for communicating with government, teachers, students.
5. The Academic Board recommends that the Faculty explore mechanisms for optimising the engagement of distant students with activities on the Camperdown campus, for example improving transportation between the Camden and Camperdown campuses and developing teleconference facilities.
6. The Academic Board recommends that the Faculty develop a flexible workload model, taking into account some of the models already developed in the University.
7. The Academic Board recommends that, as a matter of urgency, the DVC (Research) be requested to examine the impact of the University's and Sydnovate's current philosophy and practices on the Faculty's longstanding collaborations with rural Research and Development Corporations (RDCs) and, if appropriate, facilitate a solution which ensures the Faculty's capacity to continue these research relationships.
8. The Academic Board recommends that the Faculty address the reasons for the continuing delays in putting lecture notes on WebCT.

9. The Academic Board recommends that the Faculty review its compliance with the Academic Board policy on parallel teaching of undergraduate and postgraduate coursework units of study.
10. The Faculty is encouraged to explore avenues by which research students can be given opportunities to develop skills and expertise in academic teaching.
11. The Academic Board recommends that the Faculty consider the introduction of Faculty guidelines for research supervision to supplement the University-wide code of conduct, and better advise postgraduate research students of their opportunities, obligations, and thesis options.
12. The Academic Board recommends that the Faculty consult with students over the issue of identification of discipline streams on degree testamurs.

SECTION III INTRODUCTION AND FACULTY PROFILE

With 753 students in 2007, the Faculty is one of the smallest faculties in the University. This small size brings with it both benefits and challenges. There is a strong sense of community in a small Faculty, and staff expressed concern at the potential loss of autonomy and identity if the Faculty were merged with another group.

A theme that has emerged from the Review is that, as a consequence of its size, the Faculty feels the burden of compliance (both internal and external), and the consequent struggle to remain in control of its own destiny. The Review Team recognise this issue to a degree and the challenge it presents for the Faculty. The Review Team considers that the Faculty would be best served by taking a proactive strategic approach, developing ambitious but well considered aspirations which move beyond sustainability to growth.

The Faculty has drawn attention to a number of challenges, which are addressed below:

1. Infrastructure

Considerable concern was expressed by both staff and research students at the poor state of the Faculty's infrastructure, in particular on the Camperdown campus. It is alleged that facilities such as the Glasshouse are below international standard and this has an impact on international recruitment of both students and senior academic staff. The Ross Street building is a major problem, and investment in facilities has been held up, pending its replacement. The Review Team formed the view that communication on this matter is not as good as it should be, and this should be a priority for the Dean (the Review Team noted that the Dean was also not fully informed on developments). It is important for the Faculty to recognise that building works have a lengthy decision process, and to make every effort to ensure that staff know what stage of that process has been reached.

2. Degree Structures and Interfaculty Collaboration

The structure of the Faculty and the nature of its undergraduate degrees mean that a considerable amount of teaching is done in other faculties (in 2006, the Faculty taught only 57.44% (410.9 EFTSU) of the total load of its students of 715.5, teaching just under half (46.63%) of the total undergraduate load attributable to students enrolled in its degrees). The Faculty noted that there are institutional barriers to collaboration and innovative approaches to teaching as all faculties wish to protect their own EFTSUs and hence their funding base. The Review Team recognises the barriers to full co-operation between faculties inherent in the funding model. While the Faculty might feel its funding base would be better protected by devising courses with less content from other faculties and fewer options, the current approach appears to serve student interest best and is commended by the Review Team. The flip side of this, however, is that the Faculty needs to find ways to balance this lost load by creating courses of wide general interest across the University.

Commendation 1

The Academic Board commends the Faculty on taking a broader view in allowing a significant proportion of its load to be taught outside the Faculty.

Affirmation 1

The Academic Board encourages the Faculty to follow through on its intention to develop courses within areas of its expertise which would be of broad interest across the University, such as the environment, climate change and sustainability in order to enrich the University's general curriculum and compensate for the load loss it experiences in allowing its students significant study opportunities in other faculties.

3. Faculty Size and Impact on Workload

It was noted that Committee workload is relatively heavier in a small faculty. The Faculty continues to need certain faculty-level committees and representation on University committees. However, small efficiencies may still be possible and the Faculty might consider, for example, joint representation with another faculty on Academic Board Committees.

Concerns were expressed at the cost to a small faculty of compliance, for example in policies such as Students at Risk (it was noted that FlexSIS does not support the Faculty well in this) and Travel Requests.

Recommendation 1

The Academic Board recommends that the Faculty consider its committee structure to see where efficiencies might be made that would help to address the issue of workload.

4. Student Recruitment

4.1 All students

The view was expressed that, despite increased demand for graduates, there is a diminishing interest in agriculture as a profession, arising to some extent from the impact of the drought. The establishment, in July 2007, of the Australian Council of Deans of Agriculture, which will focus on perceptions of agriculture and strengthening student recruitment, will provide some support to the Faculty in dealing with this. It is important to ensure that the Government was made aware of the looming shortage of people with appropriate skills that can be applied to agriculture and natural resource management. The primary industry research and development corporations share the Faculty's and the discipline's concern, recognising that agriculture is now a high-technology industry which needs well-trained people. The Review Team was pleased to learn that students have been involved in Faculty debate on student recruitment. The students who spoke with the Review Team were universally enthusiastic about the career prospects for graduates of the Faculty and felt that more information about the nature and career prospects of degrees in the Faculty should be provided, particularly to careers advisers.

The Faculty advised that external stakeholders were involved in the Faculty's strategic planning process, specifically the future of the Faculty's teaching and research programs. It was not, however, clear how information from external stakeholders is being used to proactively address the issue of building student numbers.

4.2 International Students

The Review Team was concerned that insufficient attention was being given to international recruitment strategies: the Faculty needs to agree on the appropriate numbers of international students and identify target areas in the region where the Faculty's programs would add value. It is important for the Faculty to develop further its strong existing international networks and forge links with developing countries, for example through the China Scholarship Council. Recent Government changes to vocational areas required for residency status could have a positive impact on the Faculty, and the Faculty could be more proactive in taking these into consideration in its planning for the future.

Recommendation 2

The Academic Board recommends that the Faculty give high priority to the development of an effective marketing and recruitment strategy, to target both local and international students.

4.3 Future Strategies

With two economics degrees, the Faculty is the leading provider of programs in agricultural and resource economics in Australia. The Faculty recognises that a key part of its future academic directions will be associated with the social science disciplines in addressing issues of agricultural and rural adjustment. The view was expressed that there is a need for additional academic positions including specialists in extension and rural sociology. Moving in this direction would be a significant shift, requiring transformation in the Faculty and approval at Government level.

The Faculty also recognises that there should be more emphasis on food production and supply as an issue central to the future of humanity, which has always been a major focus and has a solid research base. This issue takes on a renewed urgency with the potential impact of climate change. Options exist in particular for the development of postgraduate coursework options in this area, including units of study offered across the University which may be available to students in other coursework masters programs. It was noted that the opportunity for interdisciplinary study was a topic under review in the Provost's Strategy Group on Postgraduate Coursework and that opportunities may open up for the Faculty as this process develops. The Faculty had a very small number of postgraduate coursework students and this is a sector which has significant growth potential.

Affirmation 2

The Academic Board affirms the need for the Faculty to develop curricula with an emphasis on food production and supply, such issues being central to the future of humanity, as a strategy for attracting new cohorts of students to its degrees and units of study.

4.4 Research Students

The Review Team noted that the Faculty was relatively strong in research student enrolments. Senior Faculty staff suggested that the Faculty had the capacity to grow its numbers from the current 110 up to a maximum of possibly 170, which would correspond to, on average, each member of academic staff taking on one new research student each year.

Commendation 2

The Academic Board commends the Faculty for its commitment to growing research student numbers and encourages the Faculty to develop strategies (in line with the recommendations on marketing, recruitment and international networks) that will enable it to continue to do so

4.5 Rebuilding undergraduate programs that cater for students interested in livestock production in an agricultural context

The transfer of Animal Science teaching to the Faculty of Veterinary Science with the establishment of the Bachelor of Animal and Veterinary Bioscience (BAnimVetBioSc) degree in 2005 has resulted in a range of difficulties for the Faculty. The Review Team was advised that this had an impact on the UAI cut-off across agricultural science courses, a loss of load for the Faculty, and a decline in the numbers of students from rural areas. Training in livestock

production is currently available to students through the Faculty of Veterinary Science, but there is a perception that the University no longer caters for students from a rural background who are interested in agricultural science with a livestock production specialisation. To the extent that Bachelor of Science in Agriculture (BScAgr) students can no longer specialise in Animal Science in year 4, this perception is now a reality. Some students feel let down with the changes and there was a perception in the Faculty that the BScAgr degree has a higher attrition rate because of this. The nature of collaboration and EFTSU sharing with the Faculty of Veterinary Science has presented problems. The Dean has expressed the view that the process of the transfer of Animal Science training to the Faculty of Veterinary Science has gone far enough and is eroding the intention that the BAnimVetBioSc degree have a strong input from Faculty of Agriculture, Food and Natural Resources (FAFNR). To transfer further load to the Faculty of Veterinary Science runs the risk of weakening FAFNR at a time when it has already lost load. The issue has been raised in various fora within the University, but at the moment it remains unresolved. One solution proposed was the introduction of a 4th year livestock production unit of study within the Faculty of Agriculture although how such a course would be staffed and resourced by the Faculty is not clear.

Affirmation 3

The Academic Board affirms the need for mechanisms to be developed to enable greater collaboration between the Faculty and the Faculty of Veterinary Science so that students have more options to take Animal Science units of study as part of the Bachelor of Science in Agriculture (BScAgr) degree, while minimising the negative impact on Faculty EFTSUs.

SECTION IV REPORT

1. LEADERSHIP

1.1 How Senior Leaders Lead

The Faculty has identified its key leadership style as being one based on building personal relationships. Communication within the Faculty is aided by its small size. The Dean knows every staff member and what they are researching and encourages other leaders in the Faculty to adopt his open style of communication.

On the basis of information available to it, the Review Team formed the view that this management style works well in a small Faculty. Staff and PhD students are satisfied with this style of communication/leadership and staff work well across boundaries. Staff appreciate the Dean's open door policy and communication style. The informal approach is supported by formal meetings and a variety of written communiqués. Staff felt that these communication channels were very good and provided an excellent supplement to informal communication.

Nevertheless, there are some consequences of an informal leadership and communication style that need monitoring and it is important that senior management continue to assess the effectiveness of this style. It is important that information distribution to individuals (particularly part-time or junior staff) not be dependent on that individual being around at the right time. There is also a risk that views expressed informally may not always acted upon, and it is important that faculty leaders are alert to the potential for students to be drawn inappropriately into Faculty politics when detached, objective mechanisms for communicating issues are not used. Nevertheless, the overall impression was of a positive, relaxed and constructive work environment.

Commendation 3

The Dean and senior leaders are commended for fostering an open and inclusive leadership and communication style within the Faculty.

1.2 Social responsibilities

The culture within the Faculty values honest scholarship and ethical behaviour in academic endeavour, values which are publicly espoused by the most senior levels of leadership. The overall research and academic process drives and supports ethical behaviour. The University Code of Conduct is used to communicate University policies regarding ethical behaviour, and breaches of the codes are managed in accordance with the requirements of the Enterprise Agreement.

The Faculty has identified a range of key communities and has acknowledged the need for further work to be done with alumni and the rural community.

Affirmation 4

The Academic Board affirms the Faculty's identification of the need for further work to be done with alumni and the rural community.

2. STRATEGIC PLANNING

2.1 Strategy Development

The Faculty's Strategic Planning Process has been underpinned in recent years by the four major planning forums it has held since March 2005. These events were designed to facilitate the Faculty's strategic planning process by posing a range of questions about the future of the Faculty's teaching and research programs, discussing the key challenges for the Faculty and proposing a number of solutions to address these. The Faculty advised that the involvement of external stakeholders in the forums ensured a broad and balanced discussion of issues. The Review Team felt, however, that there was not always a strong sense of what the Faculty does with information gathered from stakeholders. This view was echoed by some staff who felt that communication with stakeholders is not as good as it could be because it relies to a large extent on individual contacts.

With respect to the Faculty's key strategic academic objectives, the Review Team felt that there was perhaps too much emphasis on maintaining and enhancing the Faculty's current position, rather than a proactive approach to strategies that could increase the Faculty's future chance of success.

During the visit, the Review Team raised the possibility that the Faculty might consider establishing an Advisory Board as a mechanism for obtaining greater stakeholder input, using as a model Advisory Boards established in other faculties such as the Faculty of Economics and Business. It was noted that the SER had mentioned that 'Due to the breadth of stakeholders, and because the Faculty participates extensively in external events and fora, the Faculty does not have an Advisory Council'. Nevertheless, as a formalised mechanism for stakeholder interaction, an Advisory Board, with an external Chair from industry, could have benefits in supporting the Faculty in shaping and achieving its goals. The Dean agreed that there was potential for the Faculty to create an Advisory Board and that this could provide focus and support for the Faculty to lead debate and initiatives on issues of public import such as climate change.

Recommendation 3

The Academic Board recommends that the Faculty consider how it might develop more proactive strategies to develop and, where appropriate, to raise its academic aspirations. A mechanism for this might be for the Faculty to establish an Advisory Board, with wide industry representation and an external chair, as a focus for stakeholder involvement in future strategic planning.

2.2 Strategy Deployment

The SER provided examples of how the Faculty turns its strategic plan into action plans for implementation. Important aspects of this process are:

- the Faculty assigning responsibility for tasks to key individuals and ensuring integration and Faculty-wide deployment through relevant committees and boards;
- establishing measures of success to track progress on strategic objectives and for performance projections.

3. STUDENT AND STAKEHOLDER FOCUS

3.1 Knowledge of students and stakeholders

The Faculty advised that it invests considerable time and resources into engaging students and stakeholders across the student lifecycle, the aim being to ensure that students achieve their individual aspirations while meeting the expectations and needs of industry and employers. The Faculty has a wide range of mechanisms for obtaining and using student, stakeholder and market knowledge. These include formal teaching evaluations forums, marketing activities, feedback from school visits, interaction with employers and staff-student liaison meetings.

3.2 Student and stakeholder relationships and satisfaction - Building relationships to attract, satisfy and retain students and stakeholders

3.2.1 Attracting students

This issue is also addressed within the overall Faculty profile and Strategic Planning sections. To ensure its sustainability into the future, the Faculty must develop strategies to attract students at both undergraduate and postgraduate levels, locally and internationally. While the Faculty does have a range of activities it uses for this, the Review Team formed the view that the profile of the Faculty could be raised through marketing and media campaigns. The Review Team was interested to see the media strategy developed by Cox and Inall Communications for improving the profile of the Faculty but did not receive any strong indications as to how this was being followed up for the 2008 intake. Marketing and media exposure are critical for the Faculty to move forward in attracting students. The Review Team felt that there was scope for improved planning with regard to the extensive work that needs to be done in speaking to government, to teachers and to potential students. This is a considerable task and will need careful coordination of The Review Team does not underestimate the size of this task and the human resource implications of this task.

Recommendation 4

The Academic Board recommends that the Faculty review its strategies for addressing student recruitment issues, consider reviving its media campaign and consider a coordinated plan for communicating with government, teachers, students.

3.2.2 Building a sense of community

The Faculty has a number of activities for building a cohesive student cohort. These appear to be effective and students were enthusiastic in their praise of the Faculty for building a friendly and supportive environment. They feel that they receive a level of support not available to students in a larger Faculty and that they are very much part of the academic community in the Faculty. Students are able to seek not only academic advice, but also career advice from their lecturers. Staff-Student Liaison committees work well and, as mentioned above, the small size of the Faculty allows for a good deal of informal discussion so that students feel well informed.

Commendation 4

The Academic Board commends the Faculty for the effort it has made to make students feel part of the academic community within the Faculty.

At the same time, there are some factors which inhibit certain cohorts from fully participating in the academic life of the Faculty. To some extent this includes the relatively large numbers of students taking units of study in

other faculties, though this is balanced by the compulsory components taken in AFNR. There are also some issues in respect of research students. There is some sense of isolation for students in other campuses although there are significant numbers of research students and staff at the Camden and Narrabri campuses. Transportation is a major problem for research students on the Camden campus as it is accessible only by car and the distance from the Camperdown campus means that research students are not able to attend research seminars at Camperdown. Accommodation is also an issue for students at the Camden campus. Research students in the Agricultural and Resource Economics Discipline do not readily understand the predominantly scientific topics of research seminars and this reinforces the isolation of this group.

Recommendation 5

The Academic Board recommends that the Faculty explore mechanisms for optimising the engagement of distant students with activities on the Camperdown campus, for example improving transportation between the Camden and Camperdown campuses and developing teleconference facilities.

3.2.3 Determining student and stakeholder satisfaction

The Faculty makes effective use of student feedback from surveys, using this to implement changes as necessary in subsequent years. Students are advised of changes to courses or units of study that had been made on the basis of feedback, and students confirmed that they were made aware of the impact of their feedback in this way. Students also pointed out that timing was an issue in obtaining the outcomes of feedback so they did not personally experience changes made on the basis of their own feedback, and that some new lecturers obtained more frequent feedback on an informal basis. Information on the outcomes of student feedback is also made available to students through staff-student liaison meetings. The Review Team formed the view that the Faculty had well developed and well implemented mechanisms for closing the feedback loop in this way.

Commendation 5

The Academic Board commends the Faculty for the mechanisms it has in place to ensure that feedback on undergraduate units of study is implemented and that advice on any such implementation is provided to students as soon as feasible

4. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT

The Review Team notes the Faculty's summary of the data used to measure performance and support Faculty decision making.

5. WORKFORCE FOCUS

5.1 Workforce Engagement

Workforce engagement is achieved by the Faculty through both the close and personal involvement of Faculty leaders and the use of the University-wide PM&D process to align personal, Faculty and University objectives. The PM&D process is also used to initiate specific staff development programs and is also used as an effective focus for mentoring (see below). There are no specific evaluation methods in place to determine workforce engagement but the anecdotal evidence provided and comments from staff during the visit indicate that the Faculty's broad approach works effectively.

The Faculty places a strong emphasis on mentoring and the Review Team explored this strategy in some depth. Staff expressed the view that formalised research mentoring is not always successful, and that mentoring occurs to a large extent as a matter of course within research teams. Furthermore, a significant number of academic staff is research only and they are well mentored on a day-to-day basis. While there was generally a view that formalised mentoring works best for teaching, some junior staff are happy with limited or little mentoring and feel better able to shape a course when left alone to do so. Staff were satisfied that mentoring was appropriately conducted within the framework of the PM&D.

Affirmation 5

The Academic Board affirms the Faculty's commitment to the development of a more formal staff mentoring program and recommends that such a program focus on teaching, provided the Faculty is satisfied that good research mentoring is available through an individual's research group.

Another example of the Faculty's commitment to engaging its workforce is the Faculty allocation of a pool of funds for new staff members to attend international conferences in the first three years of their appointment, so that they do not have to utilise their start-up research funds for this purpose.

Commendation 6

The Academic Board commends the Faculty for its financial support to new staff to attend international conferences.

5.2 Workforce Environment

The Faculty advised that although there is no formal model, there is a broad understanding of the performance expectations of staff. The Faculty has identified its orientation and induction process as a weakness and is developing an induction manual. The Research Committee does, however, provide a formal system of support for new staff in the writing of grant proposals. While staff confirmed that they would welcome a more formal induction process, they confirmed that the 'management by walking around' technique (also referred to in the Leadership section) provided a supportive environment for staff.

Affirmation 6

The Academic Board affirms the Faculty's commitment to the development of a more formal induction process for new staff including the production of an Induction Manual.

The Faculty has also affirmed the need to undertake a thorough review of workloads, work allocation and workforce management of general staff. The Review Team explored the development of a workload model for academic staff with a number of groups during the Review Visit. The Faculty has advised that it has taken a pro-active approach to academic workload management, and that the teaching load of the Faculty is balanced to provide early career staff the opportunity to develop their research. Staff confirmed the importance of developing a workload model and stressed that a range of factors would need to be taken into account including numbers of students taught (not just face-to-face hours) and the impact of workloads arising from new University policies such as the Students at Risk policy.

Recommendation 6

The Academic Board recommends that the Faculty develop a flexible workload model, taking into account some of the models already developed in the University.

5.3 Impact of University-wide policies on workforce engagement

The Review Team has also noted the Faculty's comments that it welcomes recent changes which allow faculties to provide more input to University policies before they are implemented. It has, however, expressed concern that changes and lack of clarity on processes for signing research contracts, particularly those involving Sydnovate, have had an important effect on the Faculty, over which it has had no control. The difficult relationship with Sydnovate was raised throughout the meeting by different groups. The following points were made:

- Sydnovate conveys no apparent appreciation of the importance of relationship building between the Faculty and external funding sources that are also answerable to their stakeholders; the Faculty felt that this affected the University of Sydney brand and reputation among those funding sources.
- Unless issues are resolved or the university agrees to underwrite the research programs in question, research will cease in some research centres in the near future.
- Staff may take their research to other institutions and the rural RDCs may go elsewhere for their research; there was concern that the conjunction of Sydnovate's new approach combined with reduced research resources within these organisations caused by the drought might lead to permanent damage in the Faculty's research relationships.

The Faculty expressed the view that an adversarial environment has been created where the University is regarded poorly by external agencies.

Recommendation 7

The Academic Board recommends that, as a matter of urgency, the DVC (Research) be requested to examine the impact of Sydnovate's current philosophy and practices on the Faculty's longstanding collaborations with rural RDCs and, if appropriate, facilitate a solution which ensures the Faculty's capacity to continue these research relationships.

6. ACADEMIC PROCESS MANAGEMENT

6.1 Coursework Program Design and Delivery

In May 2003, the Faculty implemented a new non-departmental organisational structure in which undergraduate degrees were to be coordinated through "science" and "economics" discipline groupings. The leaders of the discipline groups are responsible for maintaining the quality and integrity of the teaching programs within the discipline groupings, promoting excellence in teaching among members of the academic staff of the discipline groupings, and ensuring that research in the discipline areas informs the teaching programs.

6.1.1 Course development process/Curriculum review/Monitoring program effectiveness

The Review Team noted the Faculty's collaborations with other faculties in program building despite the problems of loss of load (Commendation 1). It supports the Faculty's intentions to build cross-faculty units of wide appeal to counteract this (Affirmation 1).

6.1.2 Rewarding innovation and excellence in teaching

There was some discussion on the use of the Scholarship Index to support and reward staff achievement in teaching and learning and the Review Team was advised that these funds are largely socialised across the Faculty rather than individually allocated. It was also noted that all staff now undertake the Graduate Certificate of Higher Education as a confirmation requirement.

6.1.3 Course program design

The Review Team was impressed with the strategies the Faculty has in place to ensure high academic quality, address student and stakeholder needs and achieve sustainable educational programs. There has been considerable emphasis on the mapping of graduate attributes, with curricula designed accordingly. This effort is supported by a staff member who was appointed to help with teaching and mapping graduate attributes. Students have a good understanding of generic attributes and how these are embedded in units of study.

Commendation 7

The Academic Board commends the Faculty for the strategies it has in place to embed graduate attributes in units of study and to inform students of this process.

6.1.4 Coursework delivery

The Faculty employs a combination of delivery and learning strategies to engage students in active learning, stimulate their curiosity and enhance their motivation to learn. It also emphasises the importance of research-led teaching in the design and delivery of coursework. The Review Team found that undergraduate students have a good understanding of research-led teaching and how this operates in practice within the Faculty. It also found that 4th year honours students are given opportunities to interact with other researchers in the Faculty and are made to feel part of the relevant research team.

Commendation 8

The Faculty is commended for its explicit and effective use of research-led teaching in its coursework programs

Students commented positively on a range of strengths in the undergraduate program, including the problem based learning approach to undergraduate teaching, and specific supplementary programs such as an introduction to library resources and training in use of databases and preparation of bibliographies. A weakness was highlighted in respect of the use of WebCT, in that students were adversely affected by the delay in getting notes onto WebCT, a problem they had not encountered in other faculties.

Recommendation 8

The Academic Board recommends that the Faculty address the reasons for the continuing delays in putting lecture notes on WebCT.

The Review Team also noted that the Faculty appears to be continuing to operate in contravention of the Academic Board policy on parallel teaching of undergraduate and postgraduate coursework units of study. The

Faculty's comments on the outcomes of previous Academic Board Review recommendations on this topic indicated that this had been resolved. It appears, however, that postgraduate coursework students continue to take undergraduate units of study and the only difference between the two segments is that postgraduate students have to do some additional work to bring the unit to the postgraduate level.

Recommendation 9

The Academic Board recommends that the Faculty review its compliance with the Academic Board policy on parallel teaching of undergraduate and postgraduate coursework units of study

6.1.5 Support for Teaching and Learning

The Faculty has advised that its ability to deliver improvements in student management and quality control has been hindered by deficiencies in University-wide systems and processes. There are fundamental problems with student management, including FlexSIS, and management of the enrolment process.

6.2 Research

Current major research strengths and areas of national research leadership include:

- Crop sciences and technologies (plant pathology, cereal rust diseases, plant breeding, plant biotechnology, cereal grain science, precision agriculture);
- Land and water resources (soil science, spatial information systems, rural environmental chemistry);
- Agricultural, environmental and resource economics, development economics.

These strengths and core competencies are determined primarily through the Faculty's strategic planning process, supplemented for research activity by the 2004-2007 Faculty Research Management Plan.

6.2.1 Processes and actions for supporting researchers to achieve research excellence at an international level

The Faculty has a range of strategies to support researchers. An ARC research grant 'bounty' in the form of a small grant to staff who submit ARC applications and support in research grant proposal writing from the Research Committee and senior members of staff have significantly improved the Faculty's ARC success rate. Financial and other support is also provided to staff to enable them to attend conferences and participate in other research activities.

While there are excellent field sites for research on University farms, the Faculty has drawn attention to the difficulties it faces in achieving a high quality research culture on the Camperdown campus because of the infrastructure problems of outdated buildings and equipment, coupled with locations spread across five buildings. The Faculty is working hard to bring to reality a centralised research building to address this.

Affirmation 7

The Academic Board affirms the Faculty's intention to proceed with planning for a centralised research building

A problem that emerged during the Review Visit was that different research groups in the Faculty continue to operate in isolation from each other and that research staff are almost exclusively within the Research Centres. It was felt that there were opportunities for more inter-Faculty collaboration and cooperation. For example, it was noted that co-location with the Faculty of Veterinary Science at the Camden campus had led to collaboration. The view was expressed that senior management could be more proactive in driving communication.

6.2.2 Research Training

The Faculty has over 100 research students, of whom 28% are international students.

Activities in place to enhance the experience of these students include the Annual Research Symposium. This Symposium has been successful in helping to create a research culture. In 2006 it was organised by the research students which was of particular benefit to them in enhancing their experience in the Faculty.

The Review Team was interested in exploring the teaching training that might be available to research students in the Faculty. Some research students are involved in teaching although in general there is no training for teaching or tutoring within the Faculty. It was pointed out that it is possible for postgraduate students to be employed as part-time level-A academics (Postgraduate Fellows), but this was not widely known.

Recommendation 10

The Faculty is encouraged to explore avenues by which research students can be given opportunities to develop skills and expertise in academic teaching.

The Faculty facilitates high quality research supervision through appropriate support mechanisms and monitoring processes. However, concern was expressed by a research student that there are no common guidelines for supervisors and that supervisors do not work to an agreed common standard or set of processes. It was felt that supervisors are not always held accountable by the Faculty; for example, where issues have been identified in progress reviews and are not followed up. There were particular concerns in the Agricultural Economics group where requirements are not always made clear to research students. Research students advised that there was no clear advice provided on expected outcomes of the PhD program; for example, conferences attended, papers prepared or published. Some variety in thesis format was noted; for example, some were now in the format of a series of papers (Scandinavian model) but there was insufficient information on submitting a thesis in that form. Students advised that they were not aware of the oral examination process available to PhD students.

Recommendation 11

The Academic Board recommends that the Faculty consider the introduction of Faculty guidelines for research supervision to supplement the University-wide code of conduct, and better advise postgraduate research students of their opportunities, obligations, and thesis options.

Research students also raised some specific issues with the Review Team. One of these related to the expenditure of their research allowance. Requirements for supervisor approval frequently led to unwelcome delays and it was proposed that a mechanism might be instituted to allow research students a limited allowance without prior supervisor approval. The Review Team believes this an issue worthy of investigation within the framework of the University's Financial Delegations policies.

Another issue related to the identification of streams on testamurs. The view was expressed that it would be beneficial to students if streams were indicated.

Recommendation 12

The Academic Board recommends that the Faculty consult with students over the issue of identification of discipline streams on degree testamurs.

<p style="text-align: center;">Academic Board Review Phase 3: Faculty of Engineering and Information Technologies 11 October 2007</p>
--

SECTION I PREFACE

1. Background
2. The Review Process
3. Membership
 - 3.1 Review Team
 - 3.2 Senior Faculty representatives
 - 3.3 Students

SECTION II OUTCOMES

1. Introduction to Findings
2. Commendations
3. Affirmations
4. Recommendations

SECTION III REPORT

1. INTRODUCTION AND FACULTY PROFILE
2. LEADERSHIP
3. STRATEGIC PLANNING
4. STUDENT AND STAKEHOLDER FOCUS
5. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT
6. WORKFORCE FOCUS
7. ACADEMIC PROCESS MANAGEMENT

SECTION I PREFACE

1. Background

The Academic Board reviews are intended to encourage in faculties an academic culture that values scholarship, free inquiry and intellectual rigour and honesty, supporting, in turn, the development and maintenance of high standards of teaching, scholarship and research.

The Phase 3 Review is based on the Faculty's Self-Evaluation Report (SER) which provides an overview of the Faculty's assessment of the culture which supports, and the processes that lead to, continuous quality improvement in the Faculty at the time of the Review. To guide the development of the SER, faculties were invited to address criteria adapted from the Baldrige Education Criteria for Performance Excellence 2007.

2. The Review Process

The Faculty presented its SER to the Academic Board on 14 September 2007 along with a number of supporting documents and relevant data. The Review Team met on 5 October 2007 to consider these materials.

The review visit took place on 11 October 2007. The key purpose of the visit was to enable the Review Team to assess the robustness and validity of the Faculty's judgements.

3. Membership

3.1 Review Team

Professor Bruce Sutton, Chair
Associate Professor Tania Gerzina, Faculty of Dentistry
Dr Tom Hubble, Faculty of Science (Geosciences)
Dr Simon Hayman, Faculty of Architecture and Design
Professor Catherine Stampfl, Faculty of Science (Physics)
Mr Alan Masterton (Observer)

3.2 Senior Faculty representatives

Professor Greg Hancock, Dean
Associate Professor David Airey, Associate Dean, Teaching and Learning
Dr Doug Auld, Associate Dean, Undergraduate Studies
Associate Professor Geoff Barton, Head, Chemical and Biomolecular Engineering
Mr Dominic Curtin, Finance Director
Professor Simon Fleming, Director, OFTC
Dr Liaquat Hossain, Associate Dean, Postgraduate Coursework
Professor Ron Johnston, Executive Director, ACIIC
Professor Assaad Masri, Associate Dean, Research and Research Training
Professor Kim Rasmussen, Head, Civil Engineering
Associate Professor Steve Simpson, Electrical and Information Engineering
Professor John Small, Civil Engineering
Professor Liyong Tong, Associate Dean, International
Mr Eric Van Wijk, Faculty Executive Officer
Dr Tim Wilkinson, Associate Dean, Information Technology
Professor Lin Ye, Head, Aerospace, Mechanical and Mechatronic Engineering
Professor Albert Zomaya, Head, Information Technologies

3.3 Students

The Review Team met with two groups of students: six undergraduate students; and two research higher degree students, together with three postgraduate coursework students (joint meeting).

The Review Team acknowledges the need to be careful about generalising the views of a small group of students, with strong representation from one School, to the whole student body.

SECTION II OUTCOMES

This section summarises the main findings and lists the commendations, affirmations and recommendations. It should be noted that, in addition, other favourable comments and suggestions for improvement are mentioned throughout the text of the Report. The report draws on the information provided in the Self-Evaluation Report as well as discussion with staff and students. In some places, text from the Self-Evaluation Report has been incorporated directly into the text of this report.

1. Introduction to Findings

The Faculty of Engineering and Information Technologies consists of five Schools:

- Aerospace, Mechanical and Mechatronic Engineering (AMME)
- Electrical and Information Engineering (EIE)
- Civil Engineering (Civil)
- Chemical and Biomolecular Engineering (CBE)
- Information Technologies (SIT)

and the Australian Centre for Innovation and International Competitiveness (ACIIC), which provides the Dean with management advice and research and teaches management subjects across the Faculty.

The Faculty is one of the leading engineering research faculties in Australia. It has an international reputation for teaching and research excellence and has strong links with Australian and increasingly international industry.

The Review visit reinforced evidence presented in the Self-Evaluation Report of a strong, vibrant Faculty with a clear sense of purpose.

The Self-Evaluation Report and discussions with staff and students during the review visit brought out a number of issues which are addressed further within this Report, as follows:

1. The Faculty's aspirations are focused on the quality of its staff and students. It does not aspire to grow its undergraduate numbers further but to focus on the quality of the intake.
2. The Faculty sees its future increasingly as a Graduate School of Engineering and Information Technologies. This could include a Professional Masters degree in Engineering, and does envisage increasing growth in postgraduate coursework in all disciplines. There is specific strength in postgraduate coursework in IT (Master of Information Technology).
3. Staff are ambitious and productive, but with a clear focus on research productivity. At the same time, the low and continuing downward trend of the Faculty's CEQ scores, reflective of the students' perceptions of the quality of teaching in the Faculty, was the most serious issue raised during the Review.
4. Recent growth in student numbers has been accompanied by a decrease in staff numbers. There is a sense that the staff workload may be unsustainable although there was no indication from staff that they were unwilling to provide the extra hours required.
5. The integration of the School of Information Technologies into the Faculty has created a range of issues arising from a significant downturn in undergraduate enrolments in that area (although there has been a turnaround and IT-based courses are becoming more popular).

A summary of Commendations, Affirmations and Recommendations follows. Note that these are not prioritised by the Review Panel. They are listed below in the order in which the relevant issues appear in the SER.

2. Commendations

Areas where the Academic Board commends the practices of the Faculty are as follows:

1. The Dean and senior leaders are commended for their leadership and communication style. The Dean's Communique is an example of good practice in communication.
2. The Faculty is commended for implementation of its successful Flexible First Year program and for the completion of the recent comprehensive review of this program incorporating student and stakeholder feedback
3. The Academic Board commends the Faculty and Schools on the structures they have in place to build a sense of community for students.
4. The School of Chemical and Biomolecular Engineering is commended for the successful restructuring of its curriculum.

3. Affirmations

Areas where the Academic Board affirms the Faculty's identification of the need for improvements to its practices are as follows:

1. The Academic Board affirms the need identified by the Faculty to redesign the Masters Coursework program in line with the recommendations of the iTEV Study.
2. The Academic Board affirms the Faculty's view that there is a need for significant change in the School of Information Technologies since the School is not financially viable in its current form.
3. The Academic Board affirms the Faculty's commitment to work in partnership with Human Resources to develop a talent management program including staff development and leadership development.
4. The Academic Board affirms the Faculty's desire for more central support for policy implementation so as to facilitate greater understanding and compliance at the Faculty level.
5. The Academic Board affirms the Faculty's commitment to work with ITL to understand the factors impacting on CEQ results and whether these can be used as indicators of the success of Faculty initiatives in learning and teaching.
6. The Academic Board affirms the Faculty's commitment to the development of a staff mentoring program for more especially for more junior staff and recommends that such a program also provide a stronger focus on teaching.
7. The Academic Board affirms the Faculty's recognition that that its activities are limited in many areas by problems arising from services provided by Information and Communications Technology (ICT) and that it needs to work more closely with ICT to improve the services they deliver to the Faculty

8. The Academic Board affirms the Faculty's intention to consider the implementation of formal Faculty-wide processes to improve the quality of supervision.

4. Recommendations

Areas where the Academic Board recommends improvements to the practices of the Faculty are as follows:

1. The Academic Board recommends that the School of Information Technologies be encouraged to consider the contributions it can make to key communities both within and outside the University of Sydney. On the basis of this, the School might proceed to formulate a business case that could help to ensure its future viability.
2. The Academic Board encourages the Faculty to develop strategies that will ensure the ongoing sustainability of quality learning, teaching and research in all disciplines.
3. The Academic Board recommends that the Dean and Faculty be encouraged to develop mechanisms to enhance and reward good teaching.
4. The Academic Board recommends that the Faculty explore mechanisms to make it easier for students to access equipment in other areas of the University and make the guidelines for this cooperation clearer.
5. The Academic Board recommends that the Faculty develop, implement and evaluate strategies to improve the supervision of research higher degree students.

SECTION III REPORT

1. INTRODUCTION AND FACULTY PROFILE

The key theme that has emerged from the Review is the Faculty's focus on excellence in research and quality of student intake. There is also an increasing focus on the Faculty as a Graduate School of Engineering and Information Technologies.

The Review Team was particularly interested in exploring with the Faculty the implications of its recent substantial growth rate, whether this is sustainable and if the Faculty is close to maximum capacity. Staff are talented, committed and ambitious but there are some concerning indicators about the ongoing sustainability of the workloads imposed by teaching and research.

The students who met with the Review Team expressed pride in the international standing and high standards set by the Faculty.

The Faculty has drawn attention to a number of challenges, which are addressed below:

1.1 Degree structures

The potential impact of the Bologna Process and the implementation of the Melbourne Model were discussed during the Review visit. A key issue for consideration is the extent to which the Faculty might wish to move to a professional master's degree. There were considerable accreditation issues to take into account and the Dean advised that Engineers Australia had accredited a 3+2 program for the University of Melbourne, i.e. not just the 2-year master's degree. However, a professional master's degree might suit the nature and aspirations of staff better than an undergraduate degree.

There were significant cost implications and it would also raise issues of parallel teaching in undergraduate and postgraduate teaching. However, this was a factor in the international landscape.

1.2 Attracting the highest quality students

(a) Research students

It is difficult to persuade local students to undertake PhD degrees as there is high marketplace demand for graduates. There is huge international demand from students, but insufficient numbers of international scholarships. There remains much room for growth in research student enrolments in the Faculty.

(b) Undergraduate Students

The focus has been on the development of combined degrees and increasing the quality of student intake. The emphasis has been on reducing the tail of students with lower UAIs. There is the potential for negative impact from the UNSWS HSC+ initiative and the Faculty is taking steps to address this at Careers Fairs. UAC first round applications look strong for the Faculty but there is a danger that this could change following applicants' Change of Preferences in early 2008. The Faculty was aware of the importance of ensuring that students are informed about its Flexible Entry Scheme. At the same time, the Faculty was cautious about enrolling students with a UAI lower than about 85. The Dean advised that evidence indicated that students with higher UAIs had better degree outcomes, as well as better employment prospects.

During the visit, undergraduate students interviewed commented that they had been attracted to the Faculty because of its international standing. The geographical location of the Faculty was also of some importance. Other

attractions were the combined degrees and the flexible first year. These views confirmed the advice provided by the Faculty in the SER.

(c) Postgraduate coursework students

The Faculty has been proactive in considering how it can attract postgraduate coursework students and acknowledges that there is significant room for growth. A Feasibility Study for Postgraduate Engineering Programs was commissioned by the Faculty in 2006 with the assistance of iTEV. This study made a number of recommendations for change, including a greater degree of industry focus and some associated practical application. The Faculty's emphasis is on aligning programs with industry requirements and improving both the flexibility and the quality of programs.

Affirmation 1

The Academic Board affirms the need identified by the Faculty to redesign the Masters Coursework program in line with the recommendations of the iTEV Study.

(d) International recruitment

The Faculty actively promotes itself internationally and has achieved an increase of 8% in international enrolments since 2003. The Review Team noted that the Faculty has a significant degree of dependence on the fee income it receives from international students. The Melbourne Institute Report *Rating Major Disciplines in Australian Universities: Perceptions and Reality 2006* indicates that the Faculty is ranked first in Australia by overseas respondents.

1.3 Financial Sustainability of the School of Information Technologies

A group of staff from SIT took the opportunity to meet with the Review Team during the open session. The discussion focussed on how to achieve financial sustainability for the School while not damaging the existing curriculum or research activities. The Chair encouraged the School to think creatively about its future and to develop a sound business case on which its future could be built. This could include, for example, strategic alliances across the University and externally. The Dean acknowledged that there was concern at potential damage to the research productivity of the School and it was important that changes be undertaken without damaging its good performance.

Affirmation 2

The Academic Board affirms the Faculty's view that there is a need for significant change in the School of Information Technologies since the School is not financially viable in its current form.

Recommendation 1

The Academic Board recommends that the School of Information Technologies be encouraged to consider the contributions it can make to key communities both within and outside the University of Sydney. On the basis of this, the School might proceed to formulate a business case that could help to ensure its future viability.

2. LEADERSHIP

2.1 How Senior Leaders Lead

(a) Leadership Team

The Faculty's core senior leadership team, the Dean's Advisory Committee, has broad representation from across the Faculty. The Review Team formed the view that there are robust mechanisms for communication across the Faculty and particularly commended the Dean's Communique. The Review Team did not

obtain a clear view on how senior leaders assess their own effectiveness although it was noted that some have attended leadership training programs.

Affirmation 3

The Academic Board affirms the Faculty's commitment to work in partnership with Human Resources to develop a talent management program including staff development and leadership development.

(b) Communication and Faculty Performance

Within the overall Faculty culture, the Faculty recognises that each School has its own culture, leadership and communication style. The Review Team was informed of structures that have been created within individual Schools to improve communication between all levels of staff. Senior staff advised that communication works well within each School, through their committee structures. In fact, there is a danger of communication overload, with the same message, with slightly different emphases, coming from central University, Faculty and School levels. Other staff also confirmed this. Staff were enthusiastic in their praise of communication mechanisms within Schools and across the Faculty, with some staff stating that it was the best they had ever experienced in their working career. One Head pointed out that students are taught that leadership is a distributed attribute, which must be developed at an individual level. This is important in becoming a successful engineer. As noted in the SER, however, there is significant variation in the effectiveness and system of leadership within Schools.

Postgraduate research students informed the Review Team that there was a postgraduate research student committee and postgraduate coordinator in each School. This worked well and they felt that there was a place for them to be heard. They were able to refer to their postgraduate coordinator with any problems.

Cross-communication between Schools does not always work as well. This seems to depend on individuals and the Review Team noted that there is room for more integration between the different discipline areas in the Faculty. However, the Review Team formed the view that, in general, communication channels in Schools operate very effectively.

Commendation 1

The Dean and senior leaders are commended for their leadership and communication style. The Dean's Communique is an example of good practice in communication.

2.2 Social responsibilities

The Faculty has detailed structures in place to ensure that University policies governing ethical behaviour, in particular the Codes of Conduct, are drawn to the attention of staff and students. The SER advised that there were sometimes problems in implementing policy at Faculty and School levels arising from poor communication of requirements and resource implications. Concern was raised at the lack of coordination of the information flow on key policy issues received from central administration by the Faculty and Schools. With emails and documents coming from different sources yet covering the same topics, information could easily be lost despite the best efforts of the Faculty. It was hoped that the recent appointment of a Faculty Secretary would assist with the interface between the Faculty and central administration. One staff member pointed out that the University now had good websites for Students at Risk and

Plagiarism but these were not widely known. However, the key policy issues related to HR issues.

Affirmation 4

The Academic Board affirms the Faculty's desire for more central support for policy implementation so as to facilitate greater understanding and compliance at the Faculty level.

3. STRATEGIC PLANNING

3.1 Strategy Development

The Faculty sets its strategic directions through a formal Strategic Planning Process, School Reviews and ongoing discussions at the Dean's Advisory Committee. The Faculty Retreat in 2002 and the Faculty Strategic Planning Session in 2004 have clarified the major challenges facing the Faculty and have developed strategies that will help the Faculty achieve its mission of *providing innovative world class teaching to develop Engineers who contribute to wealth creation and enrich the quality of life*. There has been broad participation in the strategic planning process across the Faculty.

Achievement of Faculty goals is primarily a Dean's responsibility, filtering through Faculty Committees, Schools and School Committees. During the review visit, staff confirmed that they were involved in the strategic planning process at the School level and were satisfied with how the process worked.

The Review Team explored with senior staff the Faculty's strategies for maintaining quality in its academic programs when there was an imbalance between revenue and costs. It was noted that there was cross-subsidisation from research and consultancy to teaching and fee income from international students also cross-subsidised other teaching areas. It was noted that the Faculty is strengthening its position with respect to the potential vagaries of income from international students through the implementation of agreements with international universities.

Recommendation 2

The Academic Board encourages the Faculty to develop strategies that will ensure the ongoing sustainability of quality learning, teaching and research in all disciplines.

3.2 Strategy Deployment

The SER provided examples of how the Faculty turns its strategic plan into action plans for implementation. At the School level, targets are set in alignment with Faculty goals, and Schools work towards these. These included at Faculty level, setting targets to improve research completion rates. Examples were also provided at School level, including in Civil, where management meetings discuss targets for the year and align them with strategic goals. Typically two or three goals are selected, e.g. the introduction of Faculty scholarships. The Review Team formed the view that the Faculty had well developed mechanisms for strategy deployment.

4. STUDENT AND STAKEHOLDER FOCUS

4.1 Knowledge of students and stakeholders

The Faculty advised that its focus on students and stakeholders includes listening to and addressing anticipated requirements, needs and desires through the use of feedback through formal mechanisms such as teaching quality surveys and key performance indicators (such as retention, progression and attendance rates), as well as through informal feedback mechanisms. This feedback is then filtered back into the

Faculty's processes to both improve current services and to inform strategic planning for future Faculty activities.

(a) Obtaining and using student, stakeholder and market knowledge

Formal feedback mechanisms such as the USE, CEQ, SCEQ and enrolment surveys, are important components of the data available to the Faculty from student feedback. This is also addressed under 4.2 Student and stakeholder relationships and satisfaction, below.

The Flexible First Year program provide a strong case study of how the Faculty uses student and stakeholder feedback within its quality improvement process cycle to develop and innovate programs to meet student requirements. The Flexible First Year program allows students to take a common set of first year units and then decide after first semester or at the end of first year in which stream they wish to complete their degree. A survey of this program has recently been completed and has provided valuable insights for the Faculty.

Commendation 2

The Faculty is commended for implementation of its successful Flexible First Year program and for the completion of the recent comprehensive review of this program incorporating student and stakeholder feedback.

4.2 Student and stakeholder relationships and satisfaction

(a) Building relationships and growing student and stakeholder satisfaction

The Faculty advised that relationships are built through strategies designed to:

- build a sense of community, inclusion and support for students;
- provide forums for engaging industry and employers;
- provide opportunities for feedback on the quality services, such as student evaluation methods and accreditation processes;
- demonstrate the Faculty's responsiveness to students and stakeholders.

(b) Building a sense of community

Each School has a number of activities for building cohesive student cohorts. These seem to be working well and students were enthusiastic in their praise of their Schools for building friendly and supportive environments. Students in combined degrees found that there were many more opportunities for interaction in EIT than in their other Faculty. Students found it easy to seek assistance from staff and discussion groups worked well. Social activities such as weekly BBQs were particularly effective in building a cohesive student cohort. Particularly in a smaller School such as CBE, both undergraduate and postgraduate students felt that they were well informed and had ready access to staff.

Student bodies such as SUWIE (Sydney University Women in Engineering), SUEUA (the Sydney University Engineering Undergraduates Association) and SUCE (Sydney University Civil Engineers Association) worked very well. The Review Team obtained a particularly favourable impression of CBE's activities to create a bonded student community.

Commendation 3

The Academic Board commends the Faculty and Schools on the structures they have in place to build a sense of community for students.

(c) Determining student and stakeholder satisfaction

The Faculty has acknowledged the importance of addressing the reasons for its poor CEQ scores. The Review Team explored with the various groups the factors which have the strongest influence on these scores.

Some of the reasons put forward by senior staff were:

- Students may feel they are pushed too hard as the curriculum is very intensive.
- Accreditation requirements mean that a large amount of material needs to be covered.
- Poor staff/student ratios.
- Accommodation problems: students do not even fit into lecture theatres. Staff felt that that there had to be a halt to growth in student numbers.
- Staff tend to focus on research rather than the development of teaching skills. It was noted that the Faculty no longer provided any teaching awards.

It was noted that USE results were generally good, but there is an unexpected and unexplained disconnect between USE and CEQ scores. The Faculty was trying to determine what was behind these poor scores. While they were not out of alignment with CEQ scores in some other GO8 Engineering faculties (UNSW, University of Melbourne) the University of Queensland scores were much higher and the Faculty would be doing some benchmarking against that Faculty. It was felt that the University of Queensland and the University of Melbourne had a more student-focused approach. The Faculty was looking at the initiatives being developed at the University of Western Australia. One approach favoured was an Integrated Learning Centre to focus more on team-based work.

The Review Team found that the opportunities for student feedback in the Faculty worked well. Several of the students interviewed had participated in feedback groups, which comprised representatives from each year, both students and lecturers. The purpose of the feedback groups was to try to understand the reasons for the low CEQ scores. Some of the issues raised were:

- Students are not always clear what is expected of them
- Assessments were not always seen as fair – they might relate to content and material not covered in classes and not available on the web. Staff pointed out that students did not always feel that thesis marking policies were fair.
- Lecturers see the ‘big picture’ and do not always realise that the foundation knowledge on which topics are built might be lacking in their students. There are frequently gaps in students’ knowledge that are not covered.
- Students found a variety of abilities and approach in their lecturers which had a considerable impact on their learning experiences. Some students gain the impression that staff are not interested in teaching.

The Review Team was concerned, however, that while the Faculty had invited student participation from a wide range of Schools, the students interviewed were mostly from one School in the Faculty.

The Review Team explored staff attitudes towards teaching. It was noted that the Faculty does not have any internal teaching awards, although the reinstatement of a teaching award was on the Faculty’s agenda. There is a tendency in a high research-performing faculty such as this to concentrate on research at some expense to the development of teaching skills. Concentration

on research output may impact on CEQ scores. A view was expressed that staff learned their teaching skills early in their academic careers and that they could concentrate on developing their research thereafter, with this skill base firmly established. Although all new staff must now undertake the Graduate Certificate in Education for confirmation, there did not appear to be any mechanisms in place to ensure that excellence in teaching is a valued and entrenched attribute in all staff.

Nevertheless, there is evidence of excellent teaching in the Faculty. The revised curriculum in CBE had been very well received. The curriculum was integrated across the whole degree, with project work cutting across a number of units of study. Project work was based on the stage students had reached in their core courses and could be a physical (built) project/laboratory-based/or theoretical. Similar curriculum structures operated in AMME, but not in Civil. It was suggested that the Dean might wish to look into this further.

Recommendation 3

The Academic Board recommends that the Dean and Faculty be encouraged to develop mechanisms to enhance and reward good teaching.

The Review Team explored with both staff and student groups the strategies the Faculty has in place to handle Students at Risk. It was clear that staff have mechanisms for recognising potential problems, and try to deal with issues before they reach a serious stage. For example, staff acknowledge that some research students try to overachieve and supervisors are able to step in an intercept problems at an early stage.

Affirmation 5

The Academic Board affirms the Faculty's commitment to work with ITL to understand the factors impacting on CEQ results and whether these can be used as indicators of the success of Faculty initiatives in learning and teaching.

Commendation 4

The School of Chemical and Biomolecular Engineering is commended for the successful restructuring of its curriculum.

5. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT

The Review Team notes that Faculty's summary of the data used to measure performance and support Faculty decision making.

6. WORKFORCE FOCUS

6.1 Workforce Engagement

(a) Workforce enrichment

The Faculty advised that its approach to leadership and strategic planning drives its approach to workforce engagement. To achieve its mission, the Faculty recognises that it must attract, reward, retain and develop high-performing staff and create a workplace environment that encourages and enables them to do their best work. All academic staff appointed to the Faculty are expected to have the potential to progress to Level E within ten years.

For this reason, the Faculty has identified *Recognition and Reward of Staff* as one of the three key factors critical to the achievement of the Faculty's overall mission. Three of the seven strategies set out in the Strategic Plan relate to creating a workplace culture that fosters high performance:

- Improve Graduate Quality
- Improve Research and Teaching Infrastructure and Capability and
- Recruit, Develop and Retain (through reward, recognition and support) our People.

(b) Faculty culture and motivation of workforce

The Faculty's culture is such that all staff are strongly encouraged to achieve their potential. The Faculty places a strong emphasis on informal mentoring and the Review Team explored this strategy in some depth. Each Head of School has developed an informal mentoring structure, where a more senior professor within each discipline provides guidance and support to less experienced staff members. Mentoring applied even to new Level E appointments. An effective mentoring system to support junior researchers in their applications for external research funding has been developed across the Faculty. Academic staff belong to research groups and new staff are assigned to research groups, which have a mentor. Staff confirmed during the review visit that research mentoring works well generally, but was not necessarily consistent across the Faculty. Staff appreciated the external consultants available to the Faculty to assist with grant proposals through the Research Office. The Review Team noted, however, that there is no formal mentoring program for teaching.

Affirmation 6

The Academic Board affirms the Faculty's commitment to the development of a staff mentoring program for more especially for more junior staff and recommends that such a program also provide a stronger focus on teaching.

(c) Workforce and leader development

The PM&D process is used for staff development purposes and is also used as an effective focus for mentoring. The Review Team noted that the Faculty had achieved a high level of promotions to Levels D and E in the period 2002-2006.

(d) Workforce Engagement

It is clear that there is a high level of workforce engagement in the Faculty, as evidenced by the

- Competitive position of the Faculty both nationally and internationally (see Section I) – for example the iTEV Report has found that *the Faculty at University of Sydney enjoys stronger local support than that at other Sydney based Engineering Faculties.*
- High levels research productivity
- Membership of relevant professional associations by a significant proportion of staff
- The extent to which staff are prepared to exert discretionary effort to enable fulfilment of their teaching, research and administrative responsibilities at a time of ever-increasing student-staff ratios.

The Review Team noted that all staff had a very high workload. There were increasing numbers of students, decreasing numbers of staff, and a very high expectation of research productivity, along with increasing administrative workloads in recent years. Some staff with Faculty management responsibilities, such as Associate Deans, were finding it difficult to maintain their research. Other staff worked at unreasonable hours in order to ensure they had some family time. The Review Team was concerned as to whether this heavy workload was sustainable and encouraged the Dean to explore this in more depth.

There was some discussion on the development of a workload model and there was a range of views on whether a workload model could be effective. The Dean advised that he was developing a workload model.

6.2 Workforce Environment

The Faculty's strategic planning process forms the basis on which it determines how it will position itself to address current and emerging academic needs. This includes "recruiting, developing and retaining (through reward, recognition and support) our People to ensure a workforce of the highest capability." To ensure that the Faculty engages the highest quality staff at the time of recruitment, new appointees are assessed against their potential to assume senior roles within the Faculty. Each School is responsible for the management and organisation of its staff and for creating a positive and productive work environment. The Review Team formed the impression that staff were satisfied with their workforce environment although, as mentioned above, there were concerns about workload expectations.

7. ACADEMIC PROCESS MANAGEMENT

The Faculty seeks input from a broad range of stakeholders and is involved in a continuous cycle of review and quality enhancement for all its undergraduate programs which are fully accredited by Engineers Australia and the Australian Computer Society. The Review Team was impressed with the strategies the Faculty has in place to ensure high academic quality, address student and stakeholder needs and achieve sustainable educational programs.

7.1 Coursework Program Design and Delivery

(a) Core Competencies/Course development process/Coursework program design

Core curricula in the Faculty must satisfy the accreditation requirements of Engineers Australia and the Australian Computer Society which specify both the generic skills required of graduates and the technical competencies required in specific professional areas. In determining core curricula the Faculty also considers the recommendations of international professional bodies (e.g. IChemE, IEEE, ASCE, ACM, ACS, RAeS, and AIAA) which provide published guidance on expected technical competencies.

The Review Team explored the extent to which opportunities to change curricula are constrained by the accreditation process. It was explained that this comes from both sides – the requirements of accreditation and the requirements of the University and Faculty both apply. CBE recently rewrote its curriculum and this was accepted by the accrediting bodies – this was an example of how Schools can sometimes lead in curriculum development, whereas at other times they are required to follow the requirements of accreditation. Accreditation is important for international students and accreditation under the Washington Accord means that students can work anywhere.

Coursework program design and its impact on workload and satisfaction was explored with the undergraduate students. The transition to university was often difficult because of the independent learning environment at University compared to the High School learning environment.

Students found the workload very heavy and often struggled to maintain a balance with other commitments. It was noted that most students had some form of part-time employment. Students in combined courses observed that they could afford to skip the occasional lecture in other faculties, but not in Engineering, because of the essential nature of the content of engineering

lectures. Undergraduate students found the workload very heavy particularly in the final year. A view was expressed that some units may have workload requirements out of scale with their credit point value. Integration of the assessment timetable was also seen as something of a problem. Undergraduate students confirmed that their learning was competency based. They were required to pass every component of a unit of study and found that there was good articulation into the workforce.

Postgraduate coursework students commented that the quality of teaching was variable and lecturers did not always motivate students. As with undergraduate students, postgraduate students all had very heavy workloads but had a lot of self-motivation and took a great deal of pride in what they had learned. All felt very confident about the workplace skills they were gaining. Postgraduate coursework students found that the most stimulating aspect of their courses were site visits and industry experience. Students were encouraged to be self-learners and were provided with good support structures. All had very positive experiences (although were all from one School in the Faculty).

Aspects of their coursework programs they did not like were:

- Group work, where poorer students pulled down the grades of better students
- Some problems when they were in the same classes a 4th year honours students who had a better understanding of a particular issue (.e.g. Design).

The groups of students with whom the Review Team met were mostly from one School in the Faculty, hence the Team has had to use caution in extrapolating their comments across the Faculty. However, it is suggested that the Dean may wish to explore the generality of the student workload issues raised.

(b) Coursework Delivery

The delivery and appropriate resourcing of programs are the responsibility of the various Heads of School and program leaders. There are continuing review processes to allow the continued checking of a program's outcomes against the initial proposal. The Faculty employs a combination of delivery and learning strategies to engage students in active learning, stimulate their curiosity and enhance their motivation to learn. It also emphasises the importance of research-led teaching in the design and delivery of coursework.

(c) Support for Teaching and Learning

The SER commented on the effectiveness of a range of key services supporting program delivery. Delivery of IT services was a cause for some concern. The Associate Dean advised that the Faculty was looking at forming a Faculty-wide IT team. The Faculty preferred to have control of its own systems rather than having them under the central control of ICT.

Affirmation 7

The Academic Board affirms the Faculty's recognition that that its activities are limited in many areas by problems arising from services provided by Information and Communications Technology (ICT) and that it needs to work more closely with ICT to improve the services they deliver to the Faculty.

7.2 Research and Research Training

(a) Core Competencies

The core competencies of the Faculty are closely related to its mission and consistent with its Strategic Plan which, in turn, is aligned with that of the

University of Sydney. In identifying new core competencies, the Faculty is guided by:

- National research priorities
- Government research policies
- Needs of Australian industry
- Strategic plan of the University of Sydney
- New and outstanding scientific issues
- Issues affecting standards of living in Australia
- Concerns of national and international society

The Faculty has the following core competencies in research:

- Bioengineering
- Systems and Control
- Energy, environment and sustainability
- Materials and structures
- Product and process engineering
- Information and communication technologies

(b) Research

The Faculty is one of the leading engineering research faculties in Australia and has the greatest national competitive grant income per equivalent academic staff member of any engineering faculty in Australia. It is currently ranked amongst the top three engineering faculties in Australia and is ranked first in Australia in the Shanghai Jiaotong Index. When queried on the level of research depth across the Faculty, the Dean advised that all Schools had considerable research depth, with the possible current exception of Civil. The reason for this was that the School is being rebuilt following the departure of some senior research-active staff.

While acknowledging this research excellence, the Review Team also found that there is a limited amount of research collaboration between Schools. Some staff found this a problem and it very much depended on individual staff to find mechanisms to make this work.

(c) Research Training

To maintain its status as the premier choice for postgraduate study and research in Australia, the Faculty endeavours to continuously enhance all stages of the research training experience from enrolment to graduation. There was some discussion with staff on the advisability of coursework training with the PhD. There were varying views on this. Some felt that coursework in the first year would be beneficial. However, this might extend candidature, which would not be a good thing. It could be a good idea for it to become a component in probationary candidature, one advantage of this being that students would have better understanding of the University system. One of the problems, however, would be ensuring that the unit was at an appropriate level.

PhD students raised the following issues during the review visit:

- they are encouraged to publish and attend conferences but are not provided with other skills training eg writing grant applications. There is some, limited, mentoring of undergraduate honours students
- the strongest elements of their courses were their links with industry. They wanted their doctorate studies to provide them with a wide range of options, both within academia and industry.

- there is not enough integration of research groups. In CBE the research committee has helped to break down barriers and research seminars have also helped.
- the cost of living is very high –they needed to live close to the University and rents were very high. Time constraints made it difficult to find part-time work to subsidise scholarship income.
- they did not always have access within the Faculty to the equipment they needed for their research. This was particularly the case with Biomaterial equipment. It was acknowledged that this was expensive equipment and the numbers of students who required it is relatively small, but it was often difficult to access the equipment in other areas in a timely manner.

Recommendation 4

The Academic Board recommends that the Faculty explore mechanisms to make it easier for students to access equipment in other areas of the University and make the guidelines for cooperation clearer.

(d) Research Supervision

The Faculty acknowledged the need to improve the quality of its research supervision. This was being driven by PREQ outcomes and strategies include:

- Awards
- Staff/student meetings
- Establishment of supervisory teams

Affirmation 8

The Academic Board affirms the Faculty's intention to consider the implementation of formal Faculty-wide processes to improve the quality of supervision.

Recommendation 5

The Academic Board recommends that the Faculty develop, implement and evaluate strategies to improve the supervision of research higher degree students.

Academic Board Review Phase 3: Faculty of Science
--

SECTION I PREFACE

1. Background
2. The Review Process
3. Membership
 - 3.1 Review Team
 - 3.2 Observers
 - 3.3 Senior Faculty representatives
 - 3.4 Students

SECTION II OUTCOMES

1. Introduction to Findings
2. Commendations
3. Affirmations
4. Recommendations

SECTION III REPORT

1. FACULTY PROFILE
2. LEADERSHIP
3. STRATEGIC PLANNING
4. STUDENT AND STAKEHOLDER FOCUS
5. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT
6. WORKFORCE FOCUS
7. ACADEMIC PROCESS MANAGEMENT

SECTION I PREFACE

1. Background

The Academic Board reviews are intended to encourage in faculties an academic culture that values scholarship, free inquiry and intellectual rigour and honesty, supporting, in turn, the development and maintenance of high standards of teaching, scholarship and research.

The Phase 3 Review is based on the Faculty's Self-Evaluation Report (SER) which provides an overview of the Faculty's assessment of the culture which supports, and the processes that lead to, continuous quality improvement in the Faculty at the time of the Review. To guide the development of the SER, faculties were invited to address criteria adapted from the Baldrige Education Criteria for Performance Excellence 2007.

2. The Review Process

The Faculty presented its SER to the Academic Board on 8 November 2007 along with a number of supporting documents and relevant data. The Review Team met on 14 November 2007 to consider these materials.

The review visit took place on 20 November 2007. The key purpose of the visit was to enable the Review Team to assess the robustness and validity of the Faculty's judgements.

3. Membership

3.1 Review Team

Professor Bruce Sutton, Chair
Dr Steven Cumming, Faculty of Health Science
Professor Alex McBratney, Faculty of Agriculture, Food and Natural Resources
Dr Gail Mason, Faculty of Law
Professor Huw Price, Faculty of Arts

3.2 Observers

Associate Professor P McCallum
Ms L Schofield

3.3 Senior Faculty representatives

Professor Tony Underwood (Director EICC)
Professor Greg Warr (HOS, Chemistry)
Professor Nalini Joshi (HOS, Maths)
Associate Professor Anne Green (HOS, Physics)
Associate Professor Arthur Conigrave (HOS, MMB)
Professor Michael Thompson (HOS, Biological Sciences)
Professor Sally Andrews (HOS, Psychology)
Dr Bill Pritchard (HOS, Geosciences)
Dr Hans Pols (Director, HPS)
Ms Jenny Henderson (Pro-Dean)
Dr Tom Hubble (Pro-Dean)

3.4 Students

The Review Team met with three groups of students: four undergraduate students; two postgraduate coursework students; and seven research higher degree students.

The Review Team acknowledges the need to be careful about generalising the views of a small group of students to the whole student body.

SECTION II OUTCOMES

This section summarises the main findings and lists the commendations, affirmations and recommendations. It should be noted that, in addition, other favourable comments and suggestions for improvement are mentioned throughout the text of the Report. The report draws on the information provided in the Self-Evaluation Report as well as discussion with staff and students. In some places, text from the Self-Evaluation Report has been incorporated directly into the text of this report.

1. Introduction to Findings

The Faculty of Science consists of seven Schools

- Biological Sciences
- Chemistry
- Geosciences
- Mathematics & Statistics
- Molecular & Microbial Biosciences
- Physics
- Psychology

the unit for the History and Philosophy of Science and eleven affiliated Centres and Institutes.

The Faculty has a major focus on international excellence in research, focusing strongly on fundamental science and also with strong industry links. The Review visit reinforced evidence presented in the Self-Evaluation Report of a strong and highly productive Faculty, with a keen sense of identity and focus on the future.

The Self-Evaluation Report and discussions with staff and students during the review visit brought out a number of issues which are addressed further within this Report, as follows:

1. While effective processes are in place across all activities, the size and diversity of the Faculty makes it difficult to ensure that all staff, particularly early career researchers, are kept well informed on all issues and strategic objectives.
2. Recent growth in the number of research-only staff, particularly in the School of Physics raises the question of the extent to which research-only staff can contribute to the teaching load of the Faculty.
3. The Faculty has had to manage increasing teaching loads along with a decrease in the number of teaching and research staff and general staff. This may impact on the ability of teaching and research staff to maintain their research output.
4. The Faculty has specific infrastructure problems with aging buildings and equipment, and insufficient teaching and administrative space. This impedes opportunities for growth in areas of significant research strength.
5. The clear focus of the Faculty is on research productivity. Low CEQ scores reflect to some extent the primary focus placed on research. However, the Faculty does have a range of strategies in place to encourage and reward good teaching and to seek and act on student feedback.

A summary of Commendations, Affirmations and Recommendations follows. Note that these are not prioritised by the Review Panel. They are listed below in the order in which the relevant issues appear in the SER.

2. Commendations

Areas where the Academic Board commends the practices of the Faculty are as follows:

1. The Academic Board commends the Faculty for its plan to implement in 2008 a support pack for Heads and to develop a customised leadership course for all new leaders.
2. The Academic Board commends the Dean for his leadership style and the model for leadership and communication provided by the Dean's Advisory Committee.
3. The Academic Board commends the Faculty for its implementation of a scheme of leadership awards for students.
4. The Academic Board commends the Faculty for its implementation of effective processes for evaluation of outreach activities aimed at attracting the best students.
5. The Academic Board commends the Faculty for its plans to improve school leaver intake into the School of Geosciences through a dedicated high school program and appointment of a liaison officer.
6. The Academic Board commends the Faculty for establishing the position of Information Officer.
7. The Academic Board commends the School of Physics on its "Research Bites" program which engages research students in the broader research of the School.
8. The Academic Board commends the Faculty for the formation of discipline-based search committees to recruit high profile candidates.
9. The Academic Board commends the Faculty for the workshops it introduced in 2007 aimed at educating and informing early career researchers in grant availability, grant writing and publication.
10. The Academic Board commends the Faculty for its effective system of Teaching Excellence Awards.
11. The Academic Board commends the School of Chemistry for its implementation of a scheme for Postgraduate Teaching Fellows and notes that other Schools are considering implementing a similar scheme.

3. Affirmations

Areas where the Academic Board affirms the Faculty's identification of the need for improvements to its practices are as follows:

1. The Academic Board affirms the Faculty's intention to investigate a new model of Faculty taxation on Schools to better manage the diversity in funding needs.
2. The Academic Board affirms the Faculty's recognition that it needs to take better account of cultural diversity in communicating the Faculty's expectations to both new staff and students as the University becomes increasingly international.
3. The Academic Board affirms the Faculty's intention to implement a mentoring scheme for all staff, and recommends that this program also provide a focus on teaching.

4. Recommendations

Areas where the Academic Board recommends improvements to the practices of the Faculty are as follows:

1. The Academic Board recommends that the Faculty implement processes to monitor, improve and support participation in the Faculty's learning and teaching and research programs by Aboriginal and Torres Strait Islander students.
2. The Academic Board recommends that the Faculty give particular attention to pursuing its strategic objective of enhancing the efficiency of teaching, including through the rationalisation of units of study and ensuring that unit of study workload is appropriate for the number of credit points concerned.
3. The Academic Board recommends that the Faculty consider how it can develop robust mechanisms to ensure that Faculty and School-level planning are integrated with activities at all levels of Schools.
4. The Academic Board recommends that the Faculty consider how it can implement processes to meet its plan to target the postgraduate coursework market more effectively with the aim of improving its market share.
5. The Academic Board recommends that the processes for feedback through the Annual Progress Report be made more transparent to research students
6. The Academic Board recommends that the Faculty consider how it can better support research students in the development of their careers following completion of research degrees.
7. The Academic Board recommends that the Faculty consider how it can facilitate the provision of support to research students to attend overseas conferences during their candidature.

SECTION III REPORT

1. FACULTY PROFILE

The key theme that has emerged from the Review is the Faculty's focus on excellence in research and quality of student intake at both undergraduate and postgraduate levels. The key challenge for the Faculty is ensuring the sustainability of quality teaching in an environment of declining funding for teaching and specific infrastructure deficiencies.

The Faculty has drawn attention to a number of challenges, some of which are addressed below:

1.1 Managing diversity across Schools

The Review Team was particularly interested in exploring with the Faculty the ways in which it manages diversity across Schools and achieves internal collaboration and collegiality. It was noted that the size of the Faculty means that it can only work effectively through a number of highly developed Schools. The Review Team was impressed with the processes the Faculty has in place to ensure that good professional working relationships exist across the Faculty. Rather than creating difficulties, it was felt that diversity can bring a broader approach to problem solving. It was also acknowledged that strong leadership, which the Faculty has, is the key to managing diversity.

While the report does draw attention to the extent to which competition for resources can prevail over collegiality, the Review Team was pleased to learn that that this was not widely perceived to be a problem by either students or staff. There is a sense of a Faculty culture amongst staff and a sense of a shared community and cultural beliefs. Faculty-wide initiatives e.g. postgraduate scholarships which recognise the Faculty rather than the Schools, reinforce this. Not surprisingly, students, particularly postgraduate students, identified more closely with their Schools rather than the Faculty or wider University.

Affirmation 1

The Academic Board affirms the Faculty's intention to investigate a new model of Faculty taxation on Schools to better manage the diversity in funding needs.

1.2 Under-resourcing of leadership roles

In order to provide better resourcing for those in leadership positions, the Dean is implementing a package of support and developing a customised leadership course. The effectiveness of the Faculty depends on the effective leadership of Heads, Associate Deans and other senior leaders and the Faculty is commended for the initiatives it is taking.

Commendation 1

The Academic Board commends the Faculty for its plan to implement, in 2008, a support pack for Heads and to develop a customised leadership course for all new leaders.

1.3 Capacity of the faculty to administer change

The Faculty drew specific attention to the difficulties it faced in implementing new policies, including the Students at Risk policy. It was noted that the provision of support to Students at Risk was problematic. The Faculty has noted that those students attending events designed for "Students at Risk" were not the students that the Faculty was targeting. Further investigation needs to be undertaken into how the Faculty can engage, and support, Students at Risk.

1.4 Managing responsibility to students

It was noted that resource constraints could impede the delivery of optimal levels of support to students.

1.5 Promoting achievements

(see Workforce Focus section)

1.6 Renovation of building infrastructure and provision of new spaces

The Faculty's capacity to grow its research strengths is impeded by poor infrastructure and lack of space. This issue is also raised in other sections of this report, including Student and Stakeholder Satisfaction and Academic Process Management.

Infrastructure problems were also raised by students. There was concern that students who are paying fees are provided with very poor infrastructure. For example, Clinical Psychology, where there has been a recent significant increase in students, with no increase in facilities. Examples cited, include the need for 3-4 students to share each locker. Students feel the course is under-resourced.

1.7 Continuing to provide high quality graduates in a market of declining interest

The Faculty's overall strategies are working well and 1st preferences for 2008 have increased substantially. However, constant effort is required to maintain numbers, in a market that is experiencing a decline in interest in science.

1.8 Specific School challenges

Schools face a range of challenges. One of the most pressing of these relates to the success of staff in attracting research fellowships. This means that the School is required to make short term appointments to ensure teaching commitments are met. However, due to the short term nature of the appointments, staff cannot be allocated duties such as course co-ordination. This may impact on teaching quality in the long term if it is not addressed as a priority now. Other specific challenges relate to managing heavy staff workloads, current funding arrangements, declining undergraduate numbers and infrastructure problems.

2. LEADERSHIP

2.1 How Senior Leaders Lead

(a) Leadership Environment

Leadership within the Faculty is delegated from the Dean/Executive Dean to two Pro-Deans, five Directors (who also have responsibility across the three faculties in the Faculties of Science), eight Associate Deans, seven Heads of School and one Director of Unit.

These leaders operate within a complex environment in which there are two significant leadership structures:

- Formal committees and processes, including, at the Faculty level:
 - The Faculties of Science Management Committee
 - Dean's Advisory Committee
 - Budget and other specific planning meetings
- Informal discipline and personal leadership

The Review Team notes that the leadership style of the Dean and the way in which the Dean's Advisory Committee (DAC) operates are the keys to the Faculty's success. Heads agreed that there was excellent collegiality at DAC and it provided a supportive environment for discussion on issues critical to the ongoing sustainability of the Faculty.

In addition to leadership by staff, the Faculty encourages and rewards student leadership. Each year the Faculty gives leadership awards to students in recognition of service to the Faculty community that is above and beyond normal expectations. The awards are presented at the Scholarships and Prizes presentation ceremony involving family, friends and academic staff.

Commendation 2

The Academic Board commends the Dean for his leadership style and the model for leadership and communication provided by the Dean's Advisory Committee.

Commendation 3

The Academic Board commends the Faculty for its implementation of a scheme of leadership awards for students.

Communication and Faculty Performance

There are robust processes for communication within the Faculty, although some doubt was expressed with respect to the effectiveness of mechanisms for the communication of information from University-level sources such as the Academic Board. There was also some concern that general staff were not always well informed on key issues. Along with DAC, other Faculty level committees are successful in ensuring that key Faculty issues are debated in a collegial and supportive environment. Through this committee structure, key issues are communicated back to Schools through School representatives. Also, Associate Deans are very accessible and provide a further focus for ensuring effective communication. The Review Team formed the view that Faculty level communication and leadership processes work effectively and information is readily accessible.

(b) Leadership Development

To promote leadership development, the Faculty encourages each Head to appoint a Deputy Head to provide support for the Head and facilitate succession planning. While learning and networking opportunities, such as the Vice-Chancellor's Forum for Heads, were welcomed, Heads felt that there was room for improvement in the training they receive before taking on the role. As noted above, the Dean is implementing a package of support and developing a customised leadership course. The effectiveness of the Faculty depends on the effective leadership of Heads, Associate Deans and other senior leaders and the Faculty is commended for the initiatives it is taking.

(c) School level approach

The SER sets out the leadership processes, styles and strategies that operate within each School. Each School has adopted a leadership style that aims to motivate staff to achieve organisational and personal goals. The Review Team explored further the mechanisms in place within Schools to ensure that communication flows effectively to all staff. A range of structures and processes are in place to engage staff with committee structures generally mirroring those of the Faculty. The following was drawn to the Review Team's attention to supplement the advice provide in the SER.

Biological Sciences

The Head reports to all staff on a monthly basis following the DAC meeting; committee structures within the School ensure effective communication flows.

Chemistry

Information flows well, but there is concern that general staff are not as well informed as academic staff.

Molecular and Microbial Biosciences

The Head acknowledged that there was room for improvement in information flow across the perpendicular e.g. from Research to Learning and Teaching. However, it was also acknowledged that there was an infinite amount of information available and it was not possible to be fully informed on all of it.

Psychology

Staff understand the mechanisms available for obtaining information; the School Board receives reports from Chairs of all committees.

Mathematics

The Head has implemented a blog to engage all staff on current issues, and acknowledged that while communication was good, there could sometimes be problems in ensuring that information flowed effectively down to all levels.

Physics

Effective School-based structures are in place to facilitate communication.

Geosciences

Communication operates effectively, but in a more *ad-hoc* informal manner.

2.2 Social responsibilities

University policies regarding ethical behaviour are communicated to Faculty staff by way of University level induction processes and local induction processes in Schools and research groups.

The Faculty and Schools have a range of processes through which students are informed of their obligations to comply with University rules relating to their studies.

The Faculty drew attention to the need to improve its attention to cultural diversity in communicating the Faculty's expectations to both new staff and students as the University becomes increasingly international. The Review Team explored this issue with various groups. Senior staff advised that a major tool for communicating the Faculty's expectations is the Transition workshop but this is not always effective for international students due to timing issues. The Faculty indicated that measures would be implemented to address this. In general, it appeared that the Faculty does not have processes for managing cultural diversity. In particular, there was no evidence of strategies to encourage participation by Aboriginal and Torres Strait Islander students. This matter was also raised in the Faculty's Phase 2 Academic Board Review. In relation to international students, the Faculty felt that, with limited numbers of international students, it was difficult for a Faculty such as Science to implement specific programs.

Affirmation 2

The Academic Board affirms the Faculty's recognition that it needs to take better account of cultural diversity in communicating the Faculty's expectations to both new staff and students as the University becomes increasingly international.

Recommendation 1

The Academic Board recommends that the Faculty implement processes to monitor, improve and support participation in the Faculty's learning and teaching and research programs by Aboriginal and Torres Strait Islander students.

3. STRATEGIC PLANNING

3.1 Strategy Development

Faculty level

The Faculty's draft strategic plan 2003-2005 was developed by the Dean and Leadership Team. Following this, selected key staff had an opportunity to participate in the development of the plan through the Faculty Forward Focus Forum. Following the appointment of the current Dean in 2005, key goals for the Faculty were developed in a series of workshops for the Dean's Advisory Committee and a number of key senior staff. The Faculty has processes in place to ensure that its strategy is aligned with the University plan. The Faculty's focus is on research and academic excellence, in accordance with University goals. There was certainly room for growth in research but this was constrained to a large extent by infrastructure inadequacies.

The Review Team explored with senior staff the Faculty's strategies for maintaining teaching quality in the face of diminishing resources for teaching (this issue is also addressed elsewhere in this Report). It was noted that one of the Faculty's strategic objectives is to enhance the efficiency of teaching through fewer degrees, fewer units of study and collaborative teaching between Schools, faculties and other institutions. It was also noted that some units of study had not been cut back to the appropriate workload content following the move to university-wide 6 credit point units of study. There was ongoing concern that resources and infrastructure are inadequate for the implementation of new, improved approaches to teaching. Discipline Reviews were important in the achievement of strategic goals, for example in the move away from named degrees in some areas.

Recommendation 2

The Academic Board recommends that the Faculty give particular attention to pursuing its strategic objective of enhancing the efficiency of teaching, including through the rationalisation of units of study and ensuring that unit of study workload is appropriate for the number of credit points concerned.

School level

The process for integrating School strategic planning into Faculty and University plans has been moving more slowly but progress is being made. A formal ongoing cycle of School reviews was concluded in 2005 and replaced with a process of targeted School level strategic planning and interdisciplinary reviews.

Individual Schools are at various stages of the strategic planning cycle. It was acknowledged that there have been inconsistencies across the Faculty in ensuring that School-level planning is integrated into all activities across the School.

Recommendation 3

The Academic Board recommends that the Faculty consider how it can develop robust mechanisms to ensure that Faculty and School-level planning are integrated with activities at all levels of Schools.

3.2 Strategy Deployment

The SER indicated that the Faculty achieves strategy deployment through the leadership and governance structures outlined in Sections I and II of that report.

4. STUDENT AND STAKEHOLDER FOCUS

The Faculty operates in a highly competitive environment, with growing competition for the top students, and decreasing interest in the study of science from School leavers. The Faculty aims to attract the most capable students to study within the Faculty, train to become top researchers and contribute internally to the University and the Faculty as well as encouraging students to contribute and engage externally with Schools, science organisations, employers and the wider community. A particular challenge for the Faculty is to continue to attract students in an environment of diminishing interest in science amongst school leavers.

4.1 Knowledge of students and stakeholders

(a) School Leavers

The Faculty has a range of effective processes aimed at attracting School leavers. Interviews with students confirmed the success of the outreach programs offered by the Faculty during the later years of High School, which encouraged them to choose the University of Sydney. The Faculty has processes in place to evaluate outreach activities; review outcomes and review conversion rates. The Faculty also has a range of academic programs designed to attract top performing students including the Talented Student program, for which the entry requirement is 99.00.

Commendation 4

The Academic Board commends the Faculty for its implementation of effective processes for evaluation of outreach activities aimed at attracting the best students.

The Faculty also acknowledged that those schools which have dedicated high school programs and liaison officers tend to be more successful in attracting school leavers and plans to implement this in Geosciences with a view to improving school leaver intake.

Commendation 5

The Academic Board commends the Faculty for its plans to improve school leaver intake into the School of Geosciences through a dedicated high school program and appointment of a liaison officer.

(b) Postgraduate Coursework

The Faculty has acknowledged the need to implement specific strategies to target the postgraduate coursework market and improve its market share. Postgraduate coursework currently has a relatively low profile within the Faculty.

Postgraduate coursework students confirmed that their choice of the University of Sydney was driven by the reputation of both the University and the Faculty. However, the two students interviewed had made their decisions to attend the University independently of any specific marketing activities. Web-based information was very useful to prospective students but more targeted advertising could be productive.

Recommendation 4

The Academic Board recommends that the Faculty consider how it can implement processes to meet its plan to target the postgraduate coursework market more effectively with the aim of improving its market share.

(c) Postgraduate Research

Postgraduate research students indicated that they were attracted to study in the Faculty either to work with a specific staff member, or because of the research excellence and reputation of the School in which they wished to work, and the topic choices available.

(d) International Market

The Review Team explored the Faculty's processes for capturing a greater share of the market for international research students. The Faculty acknowledged room for improvement in its own marketing, while drawing attention to the need for the University also to operate more effectively in this area. University international recruitment focused largely on undergraduate and postgraduate coursework students.

(e) Information Officer

The Faculty has an Information Officer who answers queries via telephone, email and the web. This position assists the Faculty enormously in identifying areas of interest for prospective students and associated groups including teachers and parents as well as staff and current University students and the public. The Review Team noted, however, that the undergraduate students were not aware that this position existed.

Commendation 6

The Academic Board commends the Faculty for establishing the position of Information Officer.

(f) Obtaining and integrating feedback

The Faculty has a range of feedback mechanisms, including:

- Faculty website: web generated feedback
- Faculty of Science Counter and Associate Deans
- Information Officer

The Review Team found that these mechanisms work well and this was confirmed by students. Some Schools have their own Learning and Teaching Committees and processes are in place that enable Schools to ensure that students obtain timely and appropriate feedback and that in turn their feedback to Schools is acted upon. Undergraduate students drew attention to the need for more lecturer involvement in web-based discussion forums. It was noted that it is often difficult to pitch feedback at the right level and financial constraints made it difficult to provide individual support.

Research students had some particular issues with feedback. They were not clear as to the purpose of the Annual Progress Report, which is a Faculty-form. This appears to relate to the fact that research students relate more closely to their research groups and Schools rather than the Faculty as a whole. As referred to elsewhere in this report, the Faculty feels that the establishment of a University-level Graduate School would assist to address such issues.

Recommendation 5

The Academic Board recommends that the processes for feedback through the Annual Progress Report be made more transparent to research students.

4.2 Student and stakeholder relationships and satisfaction

(a) Building relationships and growing student and stakeholder satisfaction

The Faculty hosts a range of programs and key events to ensure that relationships are maintained and nurtured. The Review Team found that undergraduate students were generally satisfied with the processes for communication that exist within the Faculty. Faculty Office support was found to be good, though most students initially sought and obtained support at School level. Students were confident that they could find help when they needed it. It was noted that students were more likely to be under financial than academic stress and that the reasons for students dropping out of courses, including honours, were often not specifically related to academic issues.

(b) Building a sense of community

In a large and diverse faculty, students' primary relationship is with their Schools. This is even more so at postgraduate level. Postgraduate coursework students confirmed that they feel involved in their groups, though less so at either Faculty or University level. However, they did not see this as a problem. Communication strategies work well across the Faculty and individual Schools. The review team found that research students tended to work in some degree of isolation. It was recognised that this was difficult to address because of the specialised nature of the research they are undertaking. Research students may choose not to attend seminar or colloquium series because they are seen as not relevant and take away from the time they wish to spend on their research. Students were given the opportunity to present their own research though the number of such opportunities varies from School to School. Physics students found that the Physics Bite series of short seminars worked very well, as they provided brief, high level overviews which conveyed concepts rather than specialised detail.

Commendation 7

The Academic Board commends the School of Physics on the "Physics Bites" program.

(c) Determining student and stakeholder satisfaction

This is addressed in more detail in the Academic Process Management Section – Coursework Design and Delivery. Student and stakeholder satisfaction is captured through a comprehensive range of mechanisms, both formal and informal.

5. MEASUREMENT, ANALYSIS AND KNOWLEDGE MANAGEMENT

The Faculty uses data from a range of source to measure performance and support Faculty decision-making and innovation.

(a) Selection and use of information and data

The Faculty uses these data to help set goals and evaluate progress towards goals.

(b) Analysis and review of performance

This issue is also referred to elsewhere in the report.

6. WORKFORCE FOCUS

6.1 Workforce Engagement

(a) Recruitment

To attract high performing staff the Faculty has implemented a number of strategies. These have included the formation of discipline-based search committees whose task is the proactive identification and 'wooing' of high profile candidates. In all cases, the focus is on excellence in scholarship/research with

strong communication skills. The success of these strategies is demonstrated in the **School of Chemistry** where the criteria have been rigorously applied and as a result the School has developed a very strong, high performing workforce.

Commendation 8

The Academic Board commends the Faculty for the formation of discipline-based search committees to recruit high profile candidates.

(b) Performance Management and development

The Faculty finds that the PM&D provides a formal avenue for creating a link between individual and organisational aspirations to plan for performance. Heads indicated that PM&D a useful tool but as an annual review is not necessarily useful for mentoring and performance development which require more ongoing review. Similarly, PM&D does not provide effective mechanisms for dealing with under-performance. the Heads felt that PM&D is a useful tool with which to plan for improvement but there was little that could be done when those plans do not achieve desired outcomes.

The Faculty recognises the need to have a more formal induction process for all staff.

Commendation 9

The Academic Board commends the Faculty for the workshops it introduced in 2007 aimed at educating and informing early career researchers in grant availability, grant writing and publication.

(c) Mentoring

The Review Team notes that the Faculty is implementing a formal mentoring scheme for all academic staff with the aims of developing staff, identifying future leaders and implementing succession planning. Initially, the program is being rolled-out to all new staff and will be progressively implemented for existing staff. Under the scheme all new staff are allocated an academic mentor to provide support and advice for both the transition to the University and for academic matters. The program will be run in conjunction with the HR Talent Management Program when this is implemented.

In addition to the formal Faculty scheme, all Schools provide high level mentoring support for staff. The Review Team explored with Heads and other staff the current mechanisms for mentoring within Schools. Mentoring for research was being undertaken on a wide scale. However, this was less likely to occur for teaching. The Review Team was particularly impressed with the scheme operating in Biological Sciences, where ever member of staff is allocated a mentor, and occasionally two mentors. There are also formalised research groups which mentor formally in Schools. In Physics, ARC grant mentoring has been introduced for all levels of staff. There is informal mentoring for new staff but at present this is only being picked up through the PM&D process.

Other mentoring strategies include:

- Senior students mentoring junior students
- Formal mentoring for casual teachers in the School of Mathematics
- Mentoring between heads on management issues

It was agreed that a Faculty policy would be helpful, but that it should not be too formal and prescriptive, but focus on the requirements of individual staff members.

Affirmation 3

The Academic Board affirms the Faculty's intention to implement a mentoring scheme for all staff, and recommends that this program also provide a focus on teaching.

(d) Communication and consultation

(see Leadership section)

(e) Recognising and rewarding staff

For many years the Faculty has operated a system of Teaching Excellence Awards in parallel with the University-wide awards for Outstanding Teaching. While the Faculty and Schools have given particular attention to mechanisms for rewarding good teaching, the Dean also plans to institute new awards within the Faculty to recognise and reward excellent classroom practitioners and citations for good teachers.

The Faculty also wishes to investigate mechanisms for the reward of excellent teaching that is not necessarily tied to innovation.

Commendation 10

The Academic Board commends the Faculty for its effective system of Teaching Excellence Awards

6.2 Workforce Environment

(a) Strategies for teaching support

The Faculty has drawn attention to the increasing tensions between maintaining and improving research excellence and achieving quality in teaching. Schools have implemented a range of programs designed to provide teaching relief and support to academic staff.

The Review Team explored the extent to which research-only staff contribute to teaching given the high numbers of research-only staff in some Schools. It was noted that, in general, teaching, particularly first year teaching, is undertaken by the full-time and fractional teaching and research staff, with a limited amount being undertaken by casual staff. The view was expressed that the best use of research-only staff in teaching was for the TSP and advanced students. Research-only staff were often keen to teach, particularly if they are given full responsibility for a course. However, it was clear that with diminishing resources, some of the best researchers were choosing to reduce their teaching loads where that option was available to them.

In 2005, the School of Chemistry implemented an innovative scheme for Postgraduate Teaching Fellows. The scheme is open to postgraduate students enrolled full-time in a PhD or Masters. Appointments are advertised nationally, are highly competitive and are based on a 0.2 fractional appointment. Teaching Fellows work with the School's first year cohort of approximately 1800 students. They prepare and deliver four one hour tutorials per week, review assignments at a weekly meeting with the lecturer, and contribute to examination marking. Other Schools were considering introducing a similar scheme.

Commendation 11

The Academic Board commends the School of Chemistry for its implementation of a scheme for Postgraduate Teaching Fellows and notes that other Schools are considering implementing a similar scheme.

(b) Workload Model

The Dean has developed a formal workload model for Schools and is encouraging all Schools to use this. It was noted that there were some issues in some Schools relating to allocations of workload to non-research active staff. This could be addressed to some extent through the PM&D process where triggers for underperformance could be utilised.

7. ACADEMIC PROCESS MANAGEMENT

7.1 Coursework program design and delivery

The Faculty's approach to academic process management is based on the principle of decision-making taking place at the School level where core competencies are held, but providing a governance structure that supports the co-ordination of programs towards common goals.

(a) Coursework Program Design

The Faculty has three key undergraduate student groups:

- The Talented Student Program and the Advanced degree programs (approximately one-third of the BSc cohort)
- Combined degree students (often the brightest students)
- General BSc students.

The Review Team acknowledged the excellence of the programs in place for advanced students and was interested in exploring the Faculty's processes for managing the general BSc students. It was clear that the students themselves perceived a significant difference between students in Advanced streams and those in the standard degree. However, many students in the general BSc can take advanced subjects and it was noted that a significant proportion of this group also went on to honours. Schools have a range of programs in place to support general BSc students. Students appreciate that the BSc does not provide a specific entry to the workforce and that they will need to continue with some other form of professional training or research. All students are exposed to the best researchers in Australia at some point in their studies, and all have access to exchange programs and scholarships.

The Faculty had put some effort into the development of generic skills and the CEQ outcomes in this area, which are above University averages, are testament to their success in this. The development of critical thinking skills was a particular attribute of science teaching and there is a focus on reasoning in many subjects. It was not clear to the Review Team, however, that undergraduate students had a clear idea of generic skills and how they are acquired in their courses.

Given the size and diversity of the Faculty, student experience in respect of coursework design and its impact on workload tends to be variable. However, no particular concerns were identified with respect to student workload or assessment practices.

Research led teaching

All Schools undertake research-led teaching with a range of initiatives identified in the SER. All research and teaching staff teach in first year. Postgraduate coursework student are satisfied with the availability of research –led teaching,

but it was clear that this was not necessarily always wanted by students, who are keen to receive their clinical training. (The postgraduate students who addressed this issue were both from courses that require accreditation)

(b) Coursework Program Delivery

The Review Team found that the processes are in place to ensure teaching quality across the Faculty work effectively. Students are satisfied with the quality of their teaching. Students appreciate the personal interactions from lecture attendance. Of particular interest to the Review Team was the students' preference for 'traditional' style teaching, such as using a whiteboard. Students indicated that this style of lecture delivery was the best way of ensuring that the learning pace of a lecture was appropriate to students. Web-based material is most frequently used to supplement or enable revision of face-to-face lectures, and there was no sense that students favoured a move to more web-based delivery of teaching. Student engagement in tutorials is variable and depends on the skills and experience of tutors and the size of classes. Staff also felt that over-reliance on web-based materials contributed to the disengagement of students.

The Review Team explored the Faculty's response to its relatively low CEQ outcomes. It was clear that the relevant committees were proactive in addressing the information provided from the CEQ but it was not always possible to identify clearly what the results mean. There is good integration between Faculty and School level committees which facilitates collaboration and communication.

The Associate Deans raised a number of issues in relation to the sustainability of good teaching. These included:

- Concerns at the value of teaching relative to the value of research in the Faculty;
- Faculty has been slow in moving to address teaching and learning issues. These are being largely driven by the University. It was felt that there could be more efficiencies in teaching, for example through rationalisation of units of study and a generic first year.
- Schools operate differently from each other
- Good teaching is very labour intensive and it is difficult to maintain the highest quality in times of diminishing resources for teaching and increasing staff workloads. The Faculty has concerns about its ability to maintain staff-student ratios at an appropriate level.
- There is a perception that the current generation of students and staff is bearing too much financial responsibility for overall University infrastructure improvements and that it is time to redress this and allocate more funds for teaching.
- Administrative support has largely disappeared and academic staff have much heavier administrative workloads than in the past.
- The ongoing sustainability of the Faculty depends on research performance. Chemistry could grow more – it has the funds to grow in its research but no infrastructure. Infrastructure is a major problem if the faculty wants to grow its postgraduate research numbers.

The issue of parallel teaching of undergraduate and postgraduate coursework students was raised during the visit. There was generally a view that there was no problem in this where the same subject matter needed to be covered

7.2 Research and Research Training

(a) Core Competencies

Core research competencies are generally determined at the School level, and relate to the Faculty's vision and mission.

(b) Research

The Faculty has an outstanding track record for research and is generally ranked second in Australia, after the ANU. The Schools of Physics and Chemistry have achieved both national and international recognition for the excellence of their research, with substantial research income.

(c) Research Training

Research students receive some teaching training during their candidature and all have the opportunity to undertake teaching, though not all do so as it can impede the time available for their research. There is a 1-day Faculty training session and some School-specific training. Generally research students have aspirations for academic careers and enjoy teaching and the experience they develop from this.

Research students also expressed some desire for better support in career development. Generally this was only at a supervisor level, but it was felt that more could be organised at a School level. Students might need advice on moving into the commercial world; how and where to look and how to write an application. The Faculty was clear, however, that such support would be more appropriately placed within a University-wide Graduate School which could package all appropriate information.

Recommendation 6

The Academic Board recommends that the Faculty consider how it can better support research students in the development of their careers following completion of research degrees.

Other issues raised by research students:

- Access to funding to attend conferences: it was noted that PRSS funds are available, but they are limited both in amount and availability. Attendance at overseas research conference is critical for researchers and they felt that that the Faculty could be more supportive, given the very high costs. Schools pointed out that they did have additional funds for which students could apply. The Dean felt that the University should be more proactive in developing schemes to match student expectations, and that such issues should be handled through the establishment of a Graduate School. (This comment applies equally to early-career staff but the Faculty has one of the most generous schemes in the University for the support of new staff)
- Some problems in sharing laboratories.
- Diversity of approaches to safety – e.g. between Chemistry and Molecular and Microbial Biosciences. The Faculty should be more proactive in ensuring that safety procedures were instituted uniformly across all Schools.

Recommendation 7

The Academic Board recommends that the Faculty consider how it can facilitate the provision of support to research students to attend overseas conferences during their candidature.

(d) Research Supervision

Students are generally very happy with the quality of their research supervision.