

# ACADEMIC BOARD REVIEW

## PHASE TWO

### FACULTY OF SCIENCE

14/ 15 AUGUST 2003

## REPORT AND RECOMMENDATIONS

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*Note: This report draws on the information provided in the documentation considered by the Review Team as well as discussions with staff and students. In some places, text from the Self-Evaluation Report has been incorporated directly into the text.*

## **1. MEMBERSHIP**

### **1.1 Review Team**

Associate Professor Peter McCallum, Chair, Review Team, and Deputy Chair, Academic Board

Professor Les Field, Acting Pro-Vice-Chancellor (Research)

Professor Paul Ramsden, Pro-Vice-Chancellor (Teaching and Learning)

Professor Beth Reid, Faculty of Health Sciences

*with*

Ms Rachel Symons, Quality Assurance Officer (Teaching and Learning) (*Review Team Secretary*)

### **1.2 Senior Faculty representatives**

1.2.1 The Review Team met the following Senior Faculty representatives during the first interview:

Assoc. Professor Don Taylor, Acting Dean;

Assoc. Professor Chris Gillies, Pro-Dean;

Professor John Cannon, Associate Dean, Research;

Dr Adrian George, Associate Dean, Teaching and Learning;

Dr David Livesey, Associate Dean, Undergraduate;

Assoc. Professor Charlie Macaskill, Associate Dean, Undergraduate;

Assoc. Professor Margaret Harding, Associate Dean, Postgraduate Research;

Assoc. Professor Ian Spence, Associate Dean, International;

Professor John Connell, Head, Geosciences;

Professor Richard Christopherson, Head, Molecular and Microbial Biosciences;

Assoc. Professor Roz Hinde, Head, Biological Sciences;

Assoc. Professor Bob Howlett, Acting Head, Mathematics and Statistics;

Assoc. Professor Brian James, Head, Physics;

Professor Ian Curthoys, Head, Psychology;

Professor David Everitt, Acting Head, Information Technologies; and

Mr Kim Schwieters, Executive Director

### **1.3 Students**

1.3.1 The Review Team met with three groups of students: five undergraduate students; six postgraduate coursework students; and six postgraduate research students.

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

## **2 INTRODUCTION**

2.1 The Academic Board Phase Two review of the Faculty of Science took place on 14/15 August 2003. The current Phase Two process complements the Phase One review, following up on its recommendations and also considering the Faculty's activities and quality assurance arrangements in relation to the seven Goals of the University.

### **3 OVERVIEW OF QUALITY ASSURANCE PROCESSES IN THE FACULTY**

#### **3.1 Self-Evaluation Report**

3.1.1 The Review Team commends the Faculty on the excellence of its Self-Evaluation Report. It was comprehensive, and provided information in a user-friendly format, making it easy for the Team to gain an understanding of the activities of the Faculty relating to the seven Goals of the University. *(See Commendation One)*

#### **3.2 Consistency of processes**

3.2.1 The Faculty ensures consistency of its quality assurance processes through a number of mechanisms. The Undergraduate Studies Committee regulates new units of study and revisions of existing units of study to ensure compliance with Academic Board policies. Teaching and Learning Committee initiatives include Teaching Improvement Fund (TIF) grants and internal projects relating to implementation of Academic Board Phase One recommendations. All committees report to the Faculty Standing Committee, which then makes recommendations regarding teaching and learning to the Faculty of Science.

3.2.2 The Review Team commends the current sense of collegiality in the Teaching and Learning Committee, and the penetration of its work into all departments. This was seen as model for other committees. *(See Commendation Two)*

#### **3.3 Evaluation and quality improvement**

3.3.1 Well defined procedures are in place for incorporating students' feedback into the development of undergraduate and postgraduate teaching. The Faculty uses Institute for Teaching and Learning surveys, or their equivalent, to evaluate each unit of study every three years. The results of these surveys are reviewed by the Heads of School and appropriate changes made. Data from exit surveys are utilised to make more general changes. *(See also Section 4.6)*

#### **3.4 Benchmarking**

3.4.1 The Faculty monitors research performance with other Go6 partners using data collected by the Research Office (see Appendix 3.7 of the Self-Evaluation Report). However it acknowledges that more work needs to be done in the area of benchmarking of teaching across institutions. It has recently instituted a program of external reviews of third and fourth year units of study, and considers this to be the first step towards more formal benchmarking. The Faculty considers research benchmarking to be better developed, through the use of audited data such as grant success, publication rates, and postgraduate completions.

### **4 GOAL ONE: QUALITY TEACHING AND LEARNING**

4.1 Appendix One provides a summary of the action taken by the Faculty in relation to each of the recommendations from the Faculty's Phase One review in June 2002. Further detail follows in relation to some of the recommendations. Information relating to teaching and learning activities not covered during the Phase One review is also provided.

4.2 The Review Team commended the Faculty on its responsiveness to the Phase One review. It has put a number of projects in place to address the recommendations, including a TIF funded group work project *(See Section 4.2)*, a survey of assessment modes used across the Faculty *(See Section 4.3)*, and a tutor training program *(See Section 4.5)*. *(See Commendation Three)*

### 4.3 Group work

- 4.3.1 Recommendation 2 from Phase One related to the effectiveness and management of group work across the Faculty. The Faculty was advised to undertake a review of this issue and develop strategies for staff development and monitoring of standards to ensure that group work was appropriately designed and supported.
- 4.3.2 The Teaching and Learning Committee has been successful in obtaining a TIF grant for a group work project which will survey students on their attitudes and feelings towards group work, and will conduct an audit of the types of group work used within the Faculty. The Teaching and Learning Committee aims to have policies for group work in place by the beginning of 2004. This Committee will also promulgate and monitor the policies.
- 4.3.3 Staff reported a variety of group work models used across the Faculty. These include: rewarding students for participation rather than quality of work; providing students with the option of either working in a group or individually; having common marks for group work; rotating jobs so no one person dominates the group; giving individual marks for each task within a larger project. Staff considered that groups resulted in team bonding, and building a social environment.
- 4.3.4 Discussions with students indicated that experiences of group work are inconsistent across the Faculty. Most problems resulted from the structure of the groups, and whether everyone in the group provided equal effort to the assignments. They considered that marking all members equally did not reflect the actual input of each member when people did not contribute equally, and would prefer peer assessment. Opinions were varied regarding the benefits of group work, with one student indicating that it was easier to do assignments on ones own than in a group.
- 4.3.5 The Review Team notes that the project on groups work is in its early stages but also noted continuing student concerns. It recommends that students be informed of the existence and progress of the project. (*See Recommendation One*)

### 4.4 Assessment

- 4.4.1 Recommendations 3 and 4 of the Phase One review related to the provision of full and timely feedback to students on assessed work and increasing the variety of modes of assessment.
- 4.4.2 The Faculty Teaching and Learning Committee acknowledges that the provision of full and timely feedback appears to be a problem for some, but not all Schools. The timing of assessments is a barrier to solving the problem, with many disciplines scheduling assessments at the end of semester. This places pressure on students to complete a number of assignments simultaneously, and on staff to mark and return them. The Teaching and Learning Committee encourages Schools to use more formative assessment, and to make feedback to students explicit. It also recommends the spreading of assessment tasks, particularly in the junior years.
- 4.4.3 Staff had noted significant changes in the area of feedback on assessment. Tutor and demonstrator training sessions include information on assessment, including interaction with students and student feedback. They have received positive feedback from students on the use of electronic and mid-semester quizzes. Problems from these quizzes are addressed in class. One staff member used tutorial papers early in the semester to identify problems in critical thinking and writing. They considered this to be resource demanding but beneficial; and they had seen an improvement in the quality of work.

- 4.4.4 Student experiences of feedback on assessed work were extremely variable, ranging from marks only to full and informative comments. In general, they had noticed a general improvement in this area since 2002.
- 4.4.5 The Review Team noted that the Faculty has a number of procedures in place to address issues relating to consistency in assessment standards. Tutors are provided with guidance; staff are provided with feedback from students of previous years; and standard marking sheets are provided. Staff are also encouraged to undertake Institute for Teaching and Learning courses to learn the necessary skills. Students had noticed a divergence in marking practices and considered that marking was dependent on the tutors concerned. They expressed the view that there did not seem to be any processes in place to ensure consistency of marking practice.
- 4.4.6 The Review Team commends the work being done in the Faculty in relation to feedback on assessed work and assessment standards, and recommends that these areas of good practice be promulgated throughout the Faculty. It further recommends that the Faculty considers ways of ensuring the consistency of the application of marking schemes within schools. *(See Commendation Four and Recommendations Two and Three)*

#### **4.5 Research-led teaching**

- 4.5.1 The expansion of good practice, identified in some discipline areas, in relation to research-led teaching to benefit students in all areas, particularly first and second year students, was the subject of Recommendation 6 of the Phase One review.
- 4.5.2 The Faculty has a number of initiatives in place to ensure that all students are exposed to the research activities of the Faculty and its staff. Through the Teaching and Learning Plan staff are encouraged to highlight their research when they lecture to students; schools provide information on staff research through links on the website; and there is a high participation of senior staff and good researchers at junior levels across the Faculty. The Review Team noted that there is a consistent effort by the Faculty to introduce research into all educational programs and that students were involved in research, either through the Talented Students Program or departmental research projects. The Faculty is also participating in the activities of the Working Party on Research-Led Teaching being coordinated by the Institute for Teaching and Learning. The Review Team noted the success of the talented students program in fostering early connections between students and researchers.
- 4.5.3 Students interviewed expressed a high level of awareness of, and interest in the research of staff with evidence that this was a significant motivating factor in student learning. Students appreciated the fact that they were exposed to current research through the involvement of academic and research staff, and research fellows in their teaching; seminars at which students and lecturers presented their work; and the use of guest lecturers who talked about their research. The Review Team commends the faculty on the extent of student awareness of research in the faculty and urges that this be continued, articulated and developed as a model for other faculties. It was noted that the Faculty's statements on research-led teaching in the self-evaluation report had been modest compared with reported student experience. *(See Commendation Five)*
- 4.5.4 The Review Team noted the Faculty's involvement in the ITL research-led teaching project and recommends that it investigates ways of disseminating its success in this area across the University. *(See Recommendation Four)*

#### **4.6 Tutor Training**

- 4.6.1 Recommendation 6 addressed the need for the Faculty to provide training for sessional and part-time tutors, with the aim of achieving greater consistency and monitoring of the standards of tutor performance.
- 4.6.2 Using a TIF grant, the Teaching and Learning Committee, with assistance from the Institute for Teaching and Learning, developed a training program aimed at providing all tutors in the Faculty with the opportunity to gain a clear orientation to the skills involved in undergraduate teaching, coupled with a framework which would encourage reflection on their own teaching practice. Staff who attended the initial training considered that they benefited from the experience, and that their teaching practices had improved as a result. Data from an evaluation form completed by participants has still to be evaluated by the Teaching and Learning Committee. Results from a survey of students in tutorials indicate that staff who had participated in the program were considered to perform better than those who had not. However, students still expressed concerns at evenness of tutor quality and were not aware that tutor training had been reviewed or even that it existed.
- 4.6.3 The Review Team commends the Faculty on the implementation of the tutor training program, and suggests that it be promulgated to the wider university community. *(See Commendation Six)*
- 4.6.4 The Review Team recommends that the Faculty continue to monitor student concerns on tutor training and make arrangements for tutor training known to students. *(See Recommendation Five)*

#### **4.7 Responding to student feedback**

- 4.7.1 Recommendation 7 suggested that the Faculty introduce more formalised mechanisms for collating, analysing, disseminating and responding to student feedback, including ways of advising students of the outcomes of their feedback.
- 4.7.2 The Review Team noted that the Faculty has instituted a number of procedures to address this recommendation. Currently the Teaching and Learning Committee considers data from the Course Experience Questionnaire (CEQ) and Student Course Experience Questionnaire (SCEQ) and makes recommendations in response. School Teaching and Learning Committees note these recommendations and take action where appropriate. The Teaching and Learning Committee has undertaken, as one of its goals for 2003, to increase the awareness of students about modification to a unit resulting from student feedback. Schools have been informed that students are to be advised of changes to Units of Study that have resulted from Unit of Study (USE) evaluations. These procedures are now in place in six departments and schools. Staff informed the team that students are informed of changes through course readers and the website. They expressed the opinion that although feedback was provided to student representatives on staff/ student liaison committees, the information may not always reach the whole student body.
- 4.7.3 Whereas postgraduate coursework students provided the Team with examples of changes made to some units of study as a result of their feedback; undergraduate students were unaware of any changes.
- 4.7.4 The Review Team recommends that areas of good practice in relation to informing students on the outcomes of their feedback should be disseminated throughout the Faculty. *(See Recommendation Six)*

#### **4.8 Staff/student consultative committees**

- 4.8.1 Recommendation 8 related to the timing of staff/ student consultative committee meetings. It recommended that meetings be held at least twice per year and that they should be strategically timed to facilitate student attendance and the possibility of timely change in response to feedback.
- 4.8.2 In the Self-Evaluation Report the Faculty reported that a survey of the frequency of staff/ student consultative committees indicated that all Schools held regular consultative meetings between staff and students. These meetings were held at least twice a year, and in some cases more frequently. It considered that no further action was required in regard to this recommendation.
- 4.8.3 The Review Team were concerned that whereas some staff/ student consultative committees met regularly and were a useful and productive forum for airing student concerns; others had not had meetings during 2003. Some students felt that they were being discouraged from presenting problems to the committees, and that their concerns would not be heeded.

#### **4.9 Student representation on Faculty committees.**

- 4.9.1 At the Phase One review the Team did not manage to form a comprehensive view of the level of student input to Faculty committees. Recommendation 9 suggested that the Faculty might like to review this issue.
- 4.9.2 The Faculty is of the opinion that student input into most Faculty committees should come via the student participation at School level; however there are student representatives on some Faculty committees. For example the Postgraduate Studies Committee has a postgraduate representative, with a permanent agenda item for the raising of any issues of concern to the postgraduate student body. Students take an active role in Faculty organised activities such as the Transition Workshop, High School Activities, Information and Enrolment Days. They are consulted regularly as a regular part of all reviews of Schools and degree programs. The Teaching and Learning Committee also consults with students when review bodies, such as the Academic Board Review Team, request to interview students.

#### **4.10 Support for postgraduate students**

*See also Section 6: Goal Three: Excellence in research*

- 4.10.1 Recommendation 11 stated that the Faculty should consider ways to achieve greater consistency in terms of the quality of support for postgraduate students (coursework and research). The perception by students of inequity in distribution of funds for conferences was also to be addressed.
- 4.10.2 In response to this recommendation the Faculty carried out formal reviews of postgraduate research training in all Schools to monitor compliance with the College of Science and Technology (CST) Protocols for Higher Degree Supervision. There is a Faculty policy on Postgraduate Student Facilities, including access to desk, workspace, fax, phone, photocopier, stationery, computer with email, internet and printing facilities, maintenance for project. This was explained to students in compulsory formal induction sessions held in March. Specific resource issues raised by students during School reviews have been followed up and implemented, with action reports being sent to students. The Faculty has introduced improved communication measures to ensure that all postgraduate research students are made aware of eligibility and application procedures for the PRSS Scheme. Information on conference travel is now available through School web-sites for postgraduate students.

- 4.10.3 The Review Team commended the Faculty on the resulting tangible benefits to the postgraduate research student experience. Students appreciated the fact that they were made aware of their rights in terms of supervision, funding and infrastructure; although there were ongoing problems with computers, linking to the school network and accessing electronic journals and databases. *(See Commendation Seven)*
- 4.10.4 The Review Team noted that the Faculty did not undertake any formal benchmarking activities on the effectiveness of their research higher degree supervision. The Faculty considered that the exchange of student experiences at conferences, meetings, and other universities constituted informal benchmarking.

#### **4.11 Management of combined degrees**

- 4.11.1 Recommendation 12 related to the management of combined degrees by the Faculty, including improvement of communication with students enrolled in these degrees, and communications with the collaborating faculties.
- 4.11.2 The Review Team noted that the Faculty had recently appointed an Associate Dean with special responsibility for each of the combined degree programs. They have established contact with the appropriate advisor from the other Faculty involved in the degree. A list of names and contact details has been distributed to all staff involved in student advising, and details will be included in the Faculty website and handbook.
- 4.11.3 Staff acknowledged that communication problems still existed between faculties, especially regarding advice to students on possible combinations of courses. They suggested that a central area should be established to handle enquiries from combined degree students. The participation of staff from collaborating faculties in enrolment days was considered beneficial. Undergraduate students confirmed that conflicting advice was often received from faculties, and that this often changed from faculty to faculty. A major concern to students was timetabling between faculties when choices were limited to what could be fitted into the timetable rather than personal preferences.
- 4.11.4 Whilst acknowledging that the management of double degrees is a University wide issue, and that steps have been taken to improve communication and advice to students undertaking combined degrees, the Review Team suggests that the Faculty ensure that students are provided with consistent guidance on the structure of each degree. *(See Recommendation Seven)*

#### **4.12 Postgraduate coursework programs**

- 4.12.1 The 2002 SCEQ for postgraduate coursework students in the Faculty showed a decline in the student experience since 2000. The Faculty acknowledged a problem in this area, due to the huge increase in local and international students interested in undertaking postgraduate coursework programs, particularly in the IT area, and the resulting large classes. In some areas, part-time staff were being employed specifically to teach postgraduate coursework units, although there is a move towards the use of full-time permanent staff. This would ensure continuity and a better understanding of administrative processes. It is hoped that the new building will alleviate space problems. Strategies to manage the growth in postgraduate coursework programs include holding daytime classes for international students and evening classes for local students; and transferring of NESB students to more technical units which do not require high reading content. The Review Team noted the current strategies and suggests that the Faculty puts further processes in place to manage the expansion in postgraduate coursework student numbers. *(See Recommendation Eight)*

4.12.2 The Faculty has introduced a number of new postgraduate coursework programs and has a large number of established programs. The Dean has assured the Review Team that every postgraduate coursework program has a review timeline. The Review Team heard evidence that units of study in some coursework programs had been rationalised over time causing a drift away from the original aims in some coursework programs. The Review Team recommends that the Faculty bring together some new timelines into a postgraduate review policy so that its quality assurance processes in this area are transparent. *(See Recommendation Nine)*

4.12.3 The Review Team was advised by students that there is joint teaching of undergraduate and postgraduate students in the Faculty. The Faculty reported on initiatives which it has taken to address this issue. These include a survey of all schools to ascertain compliance with the Academic Board policy *The use of parallel teaching of postgraduate and undergraduate students in postgraduate courses*; phasing out existing units where parallel teaching which is in breach of Academic Board Policy occurs; and ensuring that all new postgraduate coursework units comply with Academic Board Policy. The Review Team recommends that the Faculty improves awareness of the Academic Board policy and ensure compliance with, and consistency in, its application in all departments and schools. *(See Recommendation Ten)*

#### **4.13 Compliance with Academic Honesty (Plagiarism) in Coursework policy**

4.13.1 The Review Team commends the Faculty on its good practice in ensuring that all students are aware of the Academic Board policy *Academic Honesty (Plagiarism) in Coursework*. Compliance with and awareness of this policy across the faculty is a model for other policies such as the IP policy in connection with postgraduate students (see 6.5 and recommendation 11). Students were informed of the policy through tutorials and lectures, handbooks and course notes, and websites. They are also made aware that plagiarism detection software may be used. *(See Commendation Eight)*

#### **4.14 Library closures and amalgamation**

4.14.1 The closure of the Chemistry Library and its amalgamation with the Geosciences Library into the Madsen Library were mentioned as areas of concern in student comments in the 2002 SCEQ and SREQ open response questions. Improved access to resources through electronic databases and journals, centralised access and increased opening hours were now seen by all parties to be beneficial. Students expressed concern about the lack of access to back issues of journals that were only available in hard copy, and the number of items relevant to their course that were held in the Health Sciences Library at the Cumberland Campus.

### **5 GOAL TWO: DIVERSITY, ACCESS AND EQUITY**

5.1 A major objective of the Faculty is to attract high quality students from a diversity of cultural and socio-economic backgrounds at undergraduate and postgraduate level and to provide them with a supportive environment.

5.2 Students considered that they benefited from being part of a diverse group, and appreciated learning about the experiences of the international students in their groups.

#### **5.3 Gender balance**

5.3.1 The Review Team commends the Faculty on its nurturing and positive environment for female staff and students. Good role models are provided to students by the presence of female staff on Faculty boards, and the involvement of women in senior positions. Female staff considered the Faculty to be a positive environment in which to work; they take part in

women's lunches, and have instituted a Women in Physics group. They considered that the allowance of salary sacrifice for childcare was a positive move; but that the obligatory presence of women on Faculty committees presented a workload issue that needed to be addressed. *(See Commendation Nine)*

#### **5.4 Support for NESB students**

- 5.4.1 The Faculty does not provide support for NESB students beyond learning assistance for international students. Lecturers and tutors are provided with a list of resources, and direct students requiring assistance to the relevant service. Students who were interviewed were unaware of support services which would help NESB students. Through the allocation of tutorials and peer study groups, the Faculty ensures that student groups do not cluster in groups which avoid engagement with English. *(See also Section 7.2)*

#### **5.5 Indigenous participation in programs**

- 5.5.1 The Faculty acknowledges the low number of Aboriginal and Torres Strait Islander students enrolled in its courses. Available evidence suggests that these students do not leave school well prepared in the basic skills necessary for science courses and do not have the necessary UAI. Students who enrol through the Koori Centre are offered bridging courses and additional tutoring. The Review Team recommends that the Faculty be more proactive in seeking Aboriginal and Torres Strait Islander students for its courses and suggest using the Koori Centre and the School Outreach program for this purpose. It further recommends the establishment of a foundation program targeted to the enrolment of Aboriginal and Torres Strait Islander students. *(See Recommendation Eleven)*

### **6 GOAL THREE: EXCELLENCE IN RESEARCH**

*See also Section 4.4 (Research-led teaching) and 4.9 (Support for postgraduate students)*

- 6.1 The Faculty is outstanding in research. It accounts for 21% of the absolute research performance of the University; four of the eight schools within the Faculty are ranked in the top ten across the University; against other Go8 Science faculties, Sydney is the best performer in RHD completions; is host to five Federation Fellows; and is the lead host to two ARC Key Centres and one Centre of Excellence. In addition the research performance of the Faculty is showing consistent and strong improvement, with 80% of staff being research active.
- 6.2 Data from the Research Office has enabled the Faculty to identify research active schools and those with the capacity to improve. School reviews will enable mechanisms to be put in place which will aid the improvement of under-achieving areas e.g. mentoring of staff in research. The Faculty considers that the key to ensuring high research output across the Faculty is the appointment of excellent researchers who are also committed teachers. The Faculty is working to ensure that the space that becomes available on the completion of the IT building and the new Science Library will be used to address infrastructure and accommodation problems, resulting from the appointment of new research staff.
- 6.3 The Review Team noted that the Faculty considers national benchmarking to be problematic due to the lack of consistency in discipline mix within Australian science faculties. It cited the case of microbiology which is in Science in Sydney, but in Medicine at the University of Melbourne. International benchmarking takes place informally at discipline level, and through noting the number of publications from Faculty staff that appear in high impact international journals.

- 6.4 The Review Team commends the Faculty on the excellence of its research performance, the high percentage of research active staff and the processes that are in place to identify areas in need of research support and development. However, it recommends that the Faculty further investigate opportunities for formal international and local benchmarking in this area in order to assist planning the next stage of the Faculty's growth. *(See Commendation Ten and Recommendation Twelve)*
- 6.5 The Review Team noted that knowledge of the University Intellectual Property (IP) Rule by staff and students varied. All new students are advised of the Rule during formal induction programs. From 2003 all postgraduate research students and their supervisors are required to sign a form in which they register details of their project and sign off on the IP policy. A separate statement is required for projects in which a student is assigning any IP arising from a project to another individual or organisation. The Faculty agreed that workshops on IP, run by the Business Liaison Office, could be included in the postgraduate research seminar series. The Faculty is advised by the Review Team to improve communication to students and staff regarding the University Intellectual Property Rule. *(See Recommendation Thirteen)*

## **7 GOAL FOUR: INTERNATIONALISATION**

- 7.1 The Faculty has a number of projects in place which will assist it to achieve its objectives of attracting high quality international students, maintaining international recognition of its scholarly activities, and broadening its income base with international fee income. An Associate Dean (International) has been appointed to oversee admission and support of international students and links with selected overseas schools are being developed by the marketing team.

### **7.2 Support for international students**

- 7.2.1 The Faculty encourages international students to attend the University orientation program, and includes them in the Faculty Transition Workshop. Additional support is provided for students who commence mid-year. Student experiences varied, with some happy with the support provided, and others indicating that it needed to be more focussed.
- 7.2.2 Reasons for the low progression rates for international students included lack of English comprehension, cultural differences in education styles, and the quality of living circumstances whilst in Sydney. Although IELTS provided an entry standard for English language proficiency, it was not always an adequate indicator of comprehension which was necessary for understanding the subject and consequently good progression. There are no formal processes in place for obtaining feedback from international students on their experiences within the Faculty. *(See also Section 5.3)*
- 7.2.3 The Review Team suggests that the Faculty address issues relating to the entry standard and support for international students, especially in relation to ensuring that NESB students have the necessary language skills to do the courses. The Review Team further recommends that the Faculty investigate the provision of an induction program for all students arriving at non-standard times. *(See Recommendation Fourteen)*

## **8 GOAL FIVE: ENGAGEMENT WITH THE INDUSTRY AND THE PROFESSIONS**

- 8.1 Policies, processes and practices which are in place to address the Faculty's objectives in relation to Goal Five include: consultation with relevant professional bodies regarding new and existing degree programs to ensure that qualifying graduates will be recognised professionally; provision of matching funds for major research initiatives that aim to lead, in part, to improved industrial linkages; grants to schools for the development of mechanisms to

improve industry interactions; and the involvement of Faculty members in the Commercialisation Forum and Fair of Ideas held in Sydney in March 2003.

- 8.2 The Review Team noted that the Faculty has been successful in attracting ARC linkage projects, and that the Research Committee helped individual staff members with the expenses attendant on seeking industrial partners. Three schools provide industry placements for their undergraduate students; and students in the Talented Students Program are involved in industry projects.

**8.3 Intellectual Property Rule – see Section 6.5**

**9 GOAL SIX: EFFECTIVE MANAGEMENT**

- 9.1 The Faculty is managed through a number of committees and sub-committees, which are chaired by the Dean, Pro-Dean or an Associate Dean. Membership includes a representative from each School and Department. Minutes from Committee meetings are often on the website. In addition each School has its own Board, Teaching Committee, Research Committee, Advisory or Management Committee and External Advisory Committee. The Faculty considers that this network of committees provides a solid structure for quality assurance, and opportunities for all staff to express their views.

- 9.2 The Review Team commends the Faculty on its responsiveness to concerns about the management of the Faculty and Student Information Office (FASIO) in the Phase One review and in the SCEQ. Opening hours and staff numbers have been increased, with the resulting shortening of queues at peak times. All staff have attended training sessions with the focus on customer service. Students appreciated the changes that had been made, especially in the area of shorter queues and staff ensuring they were in the correct queue. *(See Commendation Eleven)*

- 9.3 The Review Team noted that students were experiencing problems with changing classes through the online timetable, and with timetable clashes. Although clashes were mainly encountered by combined degree students, one example provided was within one stream of subjects where all three lectures for three different subjects occurred simultaneously.

- 9.4 The Faculty provides support for the development of leadership skills in academic staff through the participation of staff in training at College and University level, and the appointment of shadow associate deans.

- 9.5 The Review Team noted the concern of students about the clarity of the Faculty handbook, and suggests that more resources be invested in preparing a user friendly and understandable publication. *(See Recommendation Fifteen)*

**10 GOAL SEVEN: SERVICE TO THE COMMUNITY**

- 10.1 The Faculty has a broad range of interactions with the community. Its objectives included raising awareness of science and scientific issues; being an influential contributor to local, national and international scientific debate; provision of expert scientific information and advice to industry and government; participation in consortia such as the Australian Technology Park; building partnerships with alumni and alumni groups; increasing the popularity of science degrees at Sydney; promoting postgraduate courses and research; and increasing the awareness of the research profile of staff.

- 10.2 The Faculty identifies its target groups within the community as: prospective local and international undergraduate students and their parents; prospective local and international postgraduate students; teachers, principals and careers advisors in NSW secondary schools;

international secondary schools; graduates and alumni; general public; media; government and industry.

## 11 CONCLUSIONS

### 11.1 Commendations

#### Goal One: Quality of Teaching

1. The Review Team commends the Faculty on the excellence of its Self-Evaluation Report. It was comprehensive, and provided information in a user-friendly format, making it easy for the Team to gain an understanding of the activities of the Faculty relating to the seven Goals of the University. (See 3.1.1)
2. The Review Team commends the current sense of collegiality in the Teaching and Learning Committee, and the penetration of its work into all departments. This was seen as model for other committees. (See 3.2.2)
3. The Review Team commended the Faculty on its responsiveness to the Phase One review. It has put a number of projects in place to address the recommendations, including a TIF funded group work project (See Section 4.2), a survey of assessment modes used across the Faculty (See Section 4.3), and a tutor training program. (See Section 4.5). (See 4.2)
4. The Review Team commends the work being done in the Faculty in relation to feedback on assessed work and assessment standards. (See 4.4.6)
5. The Review Team commends the faculty on the extent of student awareness of research in the faculty and urges that this be continued, articulated and developed as a model for other faculties. It was noted that the Faculty's statements on research-led teaching in the self-evaluation report had been modest compared with reported student experience. (See 4.5.3)
6. The Review Team commends the Faculty on the implementation of the tutor training program, and suggests that it be promulgated to the wider university community. (See 4.6.3)
7. The Review Team commended the Faculty on the resulting tangible benefits to the postgraduate research student experience. Students appreciated the fact that they were made aware of their rights in terms of supervision, funding and infrastructure; although there were ongoing problems with computers, linking to the school network and accessing electronic journals and databases. (See 4.10.3)
8. The Review Team commends the Faculty on its good practice in ensuring that all students are aware of the Academic Board policy *Academic Honesty (Plagiarism) in Coursework*. (See 4.13.1)

#### Goal Two: Diversity, Access and Equity

9. The Review Team commends the Faculty on its nurturing and positive environment for female staff and students. (See 5.3.1)

#### Goal Three: Excellence in Research

10. The Review Team commends the Faculty on the excellence of its research performance, the high percentage of research active staff and the processes that are in place to identify areas in need of research support and development. (See 6.4)

Goal Six: Effective Management

11. The Review Team commends the Faculty on its responsiveness to concerns about the management of the Faculty and Student Information Office (FASIO) in the Phase One review and in the SCEQ. (See 9.2)

**11.2 Recommendations**

Goal One: Quality of Teaching

1. The Review Team notes that the project on group work is in its early stages but also noted continuing student concerns. It recommends that students be informed of the existence and progress of the project. (See 4.3.5)
2. The Review Team commends the work being done in the Faculty in relation to feedback on assessed work and assessment standards, and recommends that these areas of good practice be promulgated throughout the Faculty. (See 4.4.6)
3. The Review Team recommends that the Faculty considers ways of ensuring the consistency of the application of marking schemes within schools. (See 4.4.6)
4. The Review Team noted the Faculty's involvement in the ITL research-led teaching project and recommends that it investigates ways of disseminating its success in this area across the University. (See 4.5.4)
5. The Review Team recommends that the Faculty continue to monitor student concerns on tutor training and make arrangements for tutor training known to students. (See 4.6.4)
6. The Review Team recommends that areas of good practice in relation to informing students on the outcomes of their feedback should be disseminated throughout the Faculty. (See 4.7.4)
7. Whilst acknowledging that the management of double degrees is a University wide issue, and that steps have been taken to improve communication and advice to students undertaking combined degrees, the Review Team suggests that the Faculty ensure that students are provided with consistent guidance on the structure of each degree. (See 4.11.4)
8. The Review Team noted the current strategies and suggests that the Faculty puts further processes in place to manage the expansion in postgraduate coursework student numbers. (See 4.12.1)
9. The Review Team recommends that the Faculty bring together some new timelines into a postgraduate review policy so that its quality assurance processes in this area are transparent. (See 4.12.2)
10. The Review Team recommends that the Faculty improves awareness of the Academic Board policy *The use of parallel teaching of postgraduate and undergraduate students in postgraduate courses* and ensure compliance with, and consistency in, its application in all departments and schools. (See 4.12.3)

Goal Two: Diversity, Access and Equity

11. The Review Team recommends that the Faculty be more proactive in seeking Aboriginal and Torres Strait Islander students for its courses and suggest using the Koori Centre and the School Outreach program for this purpose. It further recommends the establishment of a

foundation program targeted to the enrolment of Aboriginal and Torres Strait Islander students. *(See 5.5.1)*

Goal Three: Excellence in Research

12. The Review Team recommends that the Faculty further investigate opportunities for formal international and local benchmarking in this area in order to assist planning the next stage of the Faculty's growth. *(See 6.4)*
13. The Faculty is advised by the Review Team to improve communication to students and staff regarding the University Intellectual Property Rule. *(See 6.5)*

Goal Four: Internationalisation

14. The Review Team suggests that the Faculty address issues relating to the entry standard and support for international students, especially in relation to ensuring that NESB students have the necessary language skills to do the courses. The Review Team further recommends that the Faculty investigate the provision of an induction program for all students arriving at non-standard times. *(See 7.2.3)*

Goal Six: Effective Management

15. The Review Team noted the concern of students about the clarity of the Faculty handbook, and suggests that more resources be invested in preparing a user friendly and understandable publication. *(See 9.5)*

Associate Professor Peter McCallum  
Chair, Review Team

15 October 2003

**APPENDIX ONE      REPORT ON RECOMMENDATIONS FROM PHASE ONE REVIEW**

<b>Recommendation 1</b>	Faculty should explore ways to provide stronger professional links, for example in work-based learning, and, ways to ensure that applicants and students have realistic expectations of the balance the Faculty achieves between a discipline and professional orientation
<b>Action taken by the Faculty</b>	<p>Faculty has taken action to ensure that students have awareness of the general attributes expected (and required) by employers of Science graduates. Faculty has funded, through the Teaching Improvement Fund (TIF), a program entitled ‘Enhancing the employability of Science graduates: Increasing the awareness of staff and students to the needs of the employers’. Details are given in Appendix 1.1 (and see web site: <a href="http://science.uniserve.edu.au/projects/skills/">http://science.uniserve.edu.au/projects/skills/</a>) and this will be discussed further under Recommendation 3 as it relates to graduate attributes. The program is expected to be in pilot form for semester 2 of 2003.</p> <p>Faculty has acknowledged that the establishment of professional links must, for the most part, be School-based as different disciplines have different opportunities for establishing professional links. Hence Faculty, through the Dean and the Teaching &amp; Learning Committee, has emphasised to Schools the need to establish strong links with alumni, to pursue work experience/placement where this is appropriate and to ensure that discipline reviews involve representatives from the profession/industry. A variety of such programs (across all Schools) were in place prior to the Phase 1 Review (see evaluation section below) and Faculty continues to encourage such links. In 2003 there has been an expansion of the existing programs (e.g., the Biological Sciences ‘Pathways to a Profession’ program has established a web site).</p> <p>An ongoing influence upon professional links between Schools within the Faculty and Industry is the many ARC linkage grants and APA(I) scholarships held by members of the Faculty: Biological Sciences - 5 grants, 3 APAIs; Chemistry - 11 grants, 6 APAIs; Geosciences - 1 grant, 2 APAIs; Information Technologies - 5 grants, 3 APAIs; Molecular and Microbial Biosciences - 3 grants, 3 APAIs; Physics- 7 grants, 4 APAIs; Psychology - 1 grant. These facilitate research students working on projects involving industrial collaboration.</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	Faculty will continue to encourage Schools/disciplines to maintain and/or establish professional links and will monitor change in this area.
<b>Faculty’s evaluation of the success of action taken</b>	The emphasis of Faculty on establishing strong industry links is reflected in the number of such links evident in the various Schools: Strong alumni associations in Psychology, Chemistry and HPS with alumni contributing to informing students (e.g., Psychology careers evenings); Biological Sciences’ ‘Pathways to a Profession’ program designed to inform students (from junior level onwards) of career opportunities; Industry placements in MOBT, Microbiology, Chemistry, IT and Physics; Industry representatives on external advisory panels in Chemistry and IT; Professional accreditation of programs such as Chemistry majors which are accredited with the Royal Australian Chemical Institute, Human Nutrition majors which are accredited with the Dieticians Association of Australia and Psychology majors which are accredited by the Australian Psychological Society (APS) and by the NSW Psychologists Registration Board. APS reviews the Psychology programs every 5 years (most recently in June, 2003). There are also strong professional links in the School of IT, with units taught in collaboration with industry partners, encouragement of professional membership (ACS), liaison through student societies and research collaborations.

<p><b>Recommendation 2</b></p>	<p>The Review Team formed the view that the effectiveness of the management and assessment of group work was inconsistent across the Faculty. It worked well in some areas and not in others. The Faculty might benefit from undertaking a review of this issue and developing strategies for staff development and monitoring of standards to ensure that group work is appropriately designed and supported. A Faculty-wide policy and guidelines that would also be made available to students would be beneficial. This review should take account of student feedback, both through the Faculty's committee structure and student questionnaires. Care should be taken to ensure that there is a correct balance in terms of the amount of group work a student will participate in within their degree course, and that the assessment is aligned to objectives planned to develop the various transferable skills associated with team work</p>
<p><b>Action taken by the Faculty</b></p>	<p>The Faculty of science is addressing concerns regarding group work by funding a TIF grant to the value of \$25K between April 2003 and Feb 2004. Details of the project are given in Appendix 1.2.</p> <p>The working group is cross-disciplinary, consisting of members from the Schools of Psychology, Information Technologies and Physics and from the Department of Pharmacology;</p> <p>The group work project is a research study that includes students from Pharmacology and IT completing a Feelings Towards Group Work Questionnaire (see Appendix 1.2.a) and an Attitudes Towards Peer Evaluation Questionnaire (Appendix 1.2.b) in Week 1 of their group work project and again in Week 13 at the completion of their group work project. The pre-post-test design of this study, to be carried out in Semester 2, 2003, will assist in our understanding of student satisfaction of the different group work models used by these two Schools within the Faculty of Science.</p> <p>Moreover, this TIF funded group work project will be conducting an audit of the types of group work models used within the Faculty of Science. A questionnaire will be administered to each school within the Faculty of Science. A draft version of this questionnaire and group work map of the audit are attached (Appendix 1.2.c)</p> <p>Finally, the group work team has employed a Research Assistant who is currently conducting an extensive literature review on relevant conceptual and empirical findings relating to group work in the tertiary education sector. This review will assist in the writing up of a manuscript for publication.</p> <p>Regular meetings of the group work team are ensuring steady progress in this Faculty funded project.</p> <p><b>Deliverables</b>  Documentation for students and staff describing the nature of group work and the different assessment strategies (preliminary documentation in appendix 1.2.d)  Guidelines for the design and management of group work  Student questionnaires for evaluation of group work and the peer evaluation process</p> <p><b>Intended Outcomes of the project</b>  -Consistency in the assessment of group work  -Continuous improvement in the quality of the design of group work  -Utilization of "best practice" and greater consistency in the management and assessment of group work  -Increased student understanding of and satisfaction with the role and use of group-based learning.</p>
<p><b>Further action planned but not yet implemented (if appropriate)</b></p>	<p>Recommendations from the working group to Faculty will be considered for implementation.</p>
<p><b>Faculty's evaluation of the success of action taken</b></p>	<p>The project is proceeding on time and will be evaluated upon completion.</p>

<b>Recommendation 3</b>	It is recommended that Faculty should endeavour to achieve greater consistency in the provision of full and timely feedback on assessed work, particularly for first and second year students. The Faculty may also wish to consider expanding its Strategic and Operational Plans for Teaching and Learning to include more focus on assessment, particularly in relation to the development and assessment of graduate attributes.
<b>Action taken by the Faculty</b>	<p>The Faculty Teaching &amp; Learning Committee has discussed the issue of full and timely feedback. As identified by the Phase 1 Review, this appears to be a problem for some (but not all) Schools. All Schools have been requested to examine this matter.</p> <p>One area identified by the Committee as a potential threat to full and timely feedback was the timing of assessments. In response to SCEQ comments about work-load and other student comments that assessments in some discipline areas are often crowded into the latter half of the semester (thus putting pressure on students to complete many assessments in a short time and on staff to get these marked and returned in good time) the Teaching &amp; Learning Committee has recommended that within schools there be an attempt to spread the assessments of all units of study across the semester. This has begun within some Schools (e.g., Psychology) and will be acted upon by other Schools in semester 2, 2003.</p> <p>As outlined in the response to Recommendations 4 and 10, a number of Schools use early assessment (often of a formative nature) to identify students ‘at risk’.</p> <p>The provision of assessment guidelines by Schools for their staff (permanent and casual) has been recommended as a means of attaining even marking standards across markers (particularly in units with large enrolments and multiple markers). Such guidelines are now in use in all Schools in the Faculty.</p> <p>The TIF project (mentioned in 1 above) is aimed at putting in place ‘processes to encourage students to take responsibility for developing generic attributes required for future employment and the mechanisms to self-assess the development of these attributes during the duration of a degree program’. Details of this project are given in Appendix 1.1.</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	Faculty will act upon the findings of the generic attributes project.
<b>Faculty’s evaluation of the success of action taken</b>	The action by Psychology and action proposed for other Schools in semester 2, 2003 indicates that Faculty recommendations are being followed. Feedback from Psychology students indicates that the dispersion of assessments evens out the work load (although there is still criticism of overall load).

<b>Recommendation 4</b>	The Faculty is encouraged to consider ways to increase the variety of modes of assessment.
<b>Action taken by the Faculty</b>	<p>This issue has been discussed at the Teaching &amp; Learning Committee of Faculty. The problem of the balance between class size and mode of assessment is seen as a limiting factor in Schools with large enrolments (particularly in the Junior and Intermediate years). A survey of the variety of assessment modes used by Schools at all levels has been undertaken. This indicates that there are a wide variety of assessments used within Faculty. These include formal examinations (multi-choice, short answer, essay), written practical reports (full and partial reports), oral presentations, practical skills tests, quizzes, essays, fieldwork reports, tutorial and research participation assessments, peer assessments, empirical and theoretical theses.</p> <p>In the larger introductory units there tends to be an emphasis on final assessments that do not require lengthy marking procedures (computer marked multi-choice). This has become necessary in order to meet tight examination deadlines. However, even in these large units there is continuous assessment requiring essay writing, report writing, laboratory participation and other assessments. Currently the directors of first year biology, chemistry, mathematics and physics are examining continuous assessment protocols in each subject and the correlation of performance in these assessments with overall performance (see also recommendation 10)</p> <p>Faculty has encouraged (through its Teaching &amp; Learning Committee) use of continuous assessment and greater use of formative assessments. Faculty has encouraged Schools to include continuous assessment that accounts for 50% of the total assessment in any Unit of Study. In most Units this percentage has risen although few have reached this level (most include between 30 and 40% of continuous assessment). One problem with increased assessment by means other than formal examination is the increased potential for plagiarism. This has been identified as a potentially serious problem in the School of IT but is likely also to be problematic for many other disciplines with material readily available over the web. Greater use of formative assessments is seen as a way of 'sidestepping' this problem. Formative assessment is now used in a number of Schools (particularly in the early years). Many Schools (including Maths, Chemistry, Biology, MMB, and Physics) make use of web-based materials such as regular problem sets to provide students with self-assessment of their progress.</p> <p>In 2003 Faculty has supported (through TIF) a project submitted by the School of Physiology to pilot-test ways of improving the provision of formative feedback, to increase on-line learning and to reduce inconsistencies in web-based delivery of learning tools using WebCT. Details of this project are given in Appendix 1. 3. This is seen as having wider application to formative assessment across the whole Faculty.</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	Evaluation and implementation of recommendations from the TIF project.
<b>Faculty's evaluation of the success of action taken</b>	The increase in the number of units of study that have incorporated formative assessments and the reduction in the percentage contribution of the final exam in most units of study (increased reliance on continuous assessment) indicate that the Teaching Committee recommendations have been taken up by Schools.

<b>Recommendation 5</b>	The Team recommended that the Faculty should consider ways to expand the good practice identified in some discipline areas in relation to research led teaching to benefit students in all areas, paying particular attention to first and second year students.
<b>Action taken by the Faculty</b>	<p>Since the phase 1 review, the Faculty Teaching and Learning Committee has discussed this matter on a number of occasions. There has been considerable debate about what is meant by 'research led teaching'. Teaching in all disciplines in the Faculty of Science (at all levels) is research led in the sense that scientific research is the basis for advancement in science and in all disciplines this scientific evidence is presented and discussed from year 1.</p> <p>However, at a more local and obvious level, Faculty has focused on the ways in which researchers in the Faculty integrate their research (and that of colleagues) into their teaching material and hence encourage awareness by students that they are being taught within an active research environment. As noted in the Phase 1 review, this is quite commonly done as part of the syllabi in Senior and Honours years. At the more junior years, where the emphasis tends to be on basic principles, such material cannot so readily be introduced into the syllabus. Faculty has sought to encourage Schools to make students at this level aware of the research activities of the Schools (e.g., by referring students to School web pages which include information about the research activity of the School and its staff and by having lecturers at Junior level explicitly tell students about their research areas when introducing themselves).</p> <p>The Teaching and Learning committee has undertaken, as one of its goals for 2003, to raise the profile of research informed teaching. It will do this by encouraging staff to highlight its occurrence to students. It has linked the current round of Faculty Teaching Development grants to projects addressing these goals.</p> <p>The small (but growing) group of very able students in the Talented Students Program are exposed to the research activities of the Schools in their early years through involvement in research projects.</p> <p>Faculty is participating in the activities of the Working Party on Research Led Teaching being coordinated by ITL. Prof. Andrews, a member of that working party, has kept Faculty informed and has requested feedback from members of the Teaching and Learning Committee on the questionnaire being developed by the working party.</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	Given the activities of the Working Party, Faculty is waiting on its recommendations before taking further action in this area.
<b>Faculty's evaluation of the success of action taken</b>	Feedback from School representatives on the Faculty Teaching and Learning Committee indicates that all Schools are aware of the need to emphasise research led teaching and that they are attempting to ensure that students in the junior years become aware of the research being conducted in the Schools.

<b>Recommendation 6</b>	It is recommended that the Faculty urgently consider ways to provide training for sessional and part-time tutors and to monitor consistency of compliance. The Faculty should aim to achieve greater consistency and monitoring of the standards of tutor performance
<b>Action taken by the Faculty</b>	In 2003 Faculty funded, through the TIF, a project to address this issue. The Teaching & Learning Committee, with assistance from ITL developed a training program aimed at providing all tutors in the Faculty with the opportunity to gain a clear orientation to the skills involved in undergraduate teaching, coupled with a framework that will encourage reflection on their own teaching practice. The program is organised as an initial half-day training session followed by supportive exercises throughout the semester. Completion of the full program will result in the award of an ITL/Faculty of Science Certificate in Tutoring and Laboratory Demonstrating. An outline of this project is given in Appendix 1.4. The program is structured to mesh with School-specific tutor training. All schools provide such training. The program commenced in semester 1, 2003 with participation by 400 tutors in the initial half-day program. A second program is scheduled for semester 2 and, contingent upon the success of the program, will continue to be offered each semester for new tutors.
<b>Further action planned but not yet implemented (if appropriate)</b>	Refinement and repetition of the program each semester.
<b>Faculty's evaluation of the success of action taken</b>	<p>The impact on student evaluations is yet to be seen. . The evaluation of the program by the participants is currently underway and will be complete by the end of July.</p> <p>An indication of the impact on tutors who participated in the first session (and the demand for such training) is the high proportion of tutors who have elected to continue to complete the Certificate (280/400). Feedback from tutors has been very positive.</p>

<b>Recommendation 7</b>	More formalised mechanisms for collating, analysing, disseminating and responding to student feedback (from CEQs, SCEQs, Faculty questionnaires and staff/student consultative committees) should be developed. This should include mechanisms for advising students of changes resulting from their feedback.
<b>Action taken by the Faculty</b>	<p>The current procedure is for the Faculty representative on EQA to present CEQ and SCEQ summaries to the Teaching &amp; Learning Committee. The Committee considers the data and makes recommendations in response. The School representatives on this committee (all Schools represented) take this back to their School Teaching Committees for noting and action where appropriate.</p> <p>Upon the advice of the Faculty Teaching &amp; Learning Committee, the Dean has approached ITL to obtain a more detailed analysis of the CEQ and SCEQ data. This information will be disseminated to Heads of School. This procedure has commenced in 2003.</p> <p>The Teaching and Learning committee has undertaken, as one of its goals for 2003, to increase the awareness of students about modification to a unit resulting from student feedback. The committee has linked the current round of Faculty Teaching Development grants to projects addressing these goals.</p> <p>Following the phase 1 Review, through the Teaching &amp; Learning Committee, Schools have been informed that students are to be advised of changes to Units of Study that have resulted from feedback from Unit of Study Evaluations. Such procedures are now in place in HPS, MMB, Psychology, Chemistry, Physics and Geosciences.</p> <p>The outcomes from staff/student consultative meetings (as per 8 below) are generally conveyed to students through the student representatives who attend the meetings and via minutes of meetings posted on School web sites. Faculty has not changed any of these procedures since the Phase 1 review.</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	
<b>Faculty's evaluation of the success of action taken</b>	General compliance with the Faculty request that all Schools ensure that changes to units of study resulting from Unit of Study Evaluations is conveyed to students indicates that the action taken was successful.

<b>Recommendation 8</b>	The Review Team commended the Faculty on its operation of staff/student consultative committees, but recommended that meetings should be held at least twice per year and that meetings should be strategically timed to facilitate student attendance and the possibility of timely change in response to feedback
<b>Action taken by the Faculty</b>	In 2003 Faculty has surveyed Schools to obtain information about the frequency of staff/student consultative committee meetings. This has indicated that all Schools hold regular consultative meetings between students and staff. These are held at least twice per year, and in many cases, considerably more often (up to six times a semester for IT). Faculty has taken no further action with regards to this recommendation.
<b>Further action planned but not yet implemented (if appropriate)</b>	
<b>Faculty's evaluation of the success of action taken</b>	Survey has confirmed that there is regular student consultation within all Schools.

<b>Recommendation 9</b>	The Panel did not manage to form a comprehensive view of the level of student input to Faculty committees, but, noting some indications of lack of student involvement, suggested that the Faculty might wish to review this issue.
<b>Action taken by the Faculty</b>	Faculty has examined this issue and determined that student input into most Faculty committees should come via the student participation at School level. As indicated in 8 above, there is extensive consultation with students at School level and the outcomes of this consultation, where appropriate, should be conveyed to Faculty through the School representatives. Schools have student representatives on their School Board.  The Faculty Teaching & Learning Committee has had occasion to consult particular groups of students on issues and when review bodies, such as the current one, request to interview students.  It may be noted that students take a very active role in some Faculty organised activities including, the Transition Workshop, High Schools Activities, Information and Enrolment Days. Student groups are consulted as a regular part of all reviews of Schools and degree programs.
<b>Further action planned but not yet implemented (if appropriate)</b>	
<b>Faculty's evaluation of the success of action taken</b>	

<b>Recommendation 10</b>	Notwithstanding the Faculty's good performance in raising its UAI and forming links with high schools, the Review Team encouraged the Faculty to review its admission policy, and its practices for identifying and rectifying weaknesses of entrants, such as requiring students to take mandatory bridging courses.
<b>Action taken by the Faculty</b>	<p>Currently a number of Schools run voluntary bridging courses for students who enter first year with a weak background in the discipline. These courses are advertised at Courses and Careers Day, Information Day and at enrolment sessions. The Teaching and Learning Committee has discussed the pros and cons of making these compulsory for students perceived 'at risk'. Given the resource implications, there is very little support for such a move. Moreover it was felt there was an equity issue with making bridging courses compulsory for adults that have not yet commenced their University degree. Many Schools now focus on early identification of those perceived at risk by use of formative assessments (as outlined in 4) and early tutorial quizzes. Identification of such students is now a focus of Faculty.</p> <p>Faculty has provided a Teaching Development Grant to fund a project seeking ways to identify students at risk during their first year and to devise strategies of special assistance for such students. The grant has allowed a research assistant to model data from 2002 to determine the indicators that allow students at risk to be identified, with the idea that remedial action can then be taken. The project extends across Maths, Biology, Chemistry and Physics, all of which have different assessment procedures during the semester. Marks from one or more of the assessments within a subject area have been correlated with both final mark and exam mark for that subject but show considerable scatter. So far, and rather surprisingly, we have not highlighted any obvious indicators that we may use to detect students at risk but work is still progressing. While alignment of assessments is obviously an issue, so too is the study pattern of students - some perform adequately during semester but find the pressure of an exam brings them down, while others obviously do not put in much effort during semester, 'cram' for the exam and end up with passing. This is also being examined. The project is continuing</p>
<b>Further action planned but not yet implemented (if appropriate)</b>	More Schools are introducing streaming to allow students of similar academic backgrounds to study together. For example chemistry is revising its curriculum to allow Faculty of Engineering students to enrol in Fundamentals of Chemistry and Biology is introducing a unit for students with no HSC biology in 2004.
<b>Faculty's evaluation of the success of action taken</b>	Thus far, the project has produced interesting results but not ones that can be acted upon. It has proved to be a very difficult topic to research.

<p><b>Recommendation 11</b></p>	<p>It is recommended that Faculty should consider ways to achieve greater consistency in terms of the quality of support for postgraduate students (coursework and research) and also its fitness for purpose. Faculty is asked to note and address the view expressed to the Review Team by some students that there is not equity in the distribution of funds for conferences</p>
<p><b>Action taken by the Faculty</b></p>	<p>The Faculty carried out formal reviews of postgraduate research training in all Schools in the Faculty in 2002 to monitor compliance with the CST Protocols for Higher Degree Supervision. Key recommendations for action by the University/newly appointed Dean of Graduate Studies (DoGS), Faculty and Schools have been considered by the Faculty Postgraduate Studies Committee (PGSC). The DoGS has been invited to PGSC to discuss central issues and all Schools have all responded in writing to the recommendations.</p> <p>The University PRSS Scheme provides up to \$1200 (national) or \$2000 (international) funds for conference travel to <b>all</b> FT postgraduates. Additional funds may be available from Grants-in-Aid, prizes or supplementary funds provided by individual supervisors. Improved communication regarding the PRSS Scheme in 2003, to ensure student awareness of eligibility and application procedures, has been implemented via:</p> <ul style="list-style-type: none"> <li>(i) formal induction sessions held in all Schools attended by the Associate Dean and/or the DoGS at which this scheme, as well as IP, and general postgraduate issues, were explained;</li> <li>(ii) action item from the School reviews was establishment of web-sites for postgraduate students, which include conference travel information; these sites are now available in all Schools in the Faculty.</li> </ul> <p>Faculty Policy on Postgraduate Student Facilities (including access to desk, workspace, locker, fax, phone, photocopier, stationery, computer with email, internet and printing facilities, maintenance for project)</p> <ul style="list-style-type: none"> <li>(i) all Schools explained resources available to students in compulsory formal induction sessions held in March;</li> <li>(ii) Specific resource issues raised by students during Faculty Reviews of Schools in 2002 have been addressed where possible</li> </ul> <p>IP has been addressed at formal induction sessions and by introduction of new postgraduate commencement forms in which supervisory arrangements and IP are agreed in writing</p> <ul style="list-style-type: none"> <li>• Diverse research in Faculty necessitates a broad range of facilities and resources for postgraduate students. All students are given the opportunity to raise concerns re support on Annual Progress Forms and action by Schools is monitored by Associate Dean. Students have been advised of mechanisms to address such issues at formal induction sessions (see PRSS comments above)</li> </ul> <p>Associate Dean is CST representative on University Committee developing new Flexis postgraduate data-base (due for release Oct 2003), which will facilitate timely and effective feedback to postgraduates by the Faculty</p> <p>Postgraduate Coursework evaluation to cover all programmes, reporting to the Associate Dean (Coursework) implemented; surveys will be tabled at PGSC.</p> <p>Flexibility in coursework majors, and a new unit of study, introduced into the MIT/MAIT coursework Masters in response to student concerns re course requirements; new labs constructed specifically for the MIT/MAIT programme due to significant expansion and increase in enrolments in last 2 years.</p>

<p><b>Further action planned but not yet implemented (if appropriate)</b></p>	<p>PGSC liaising with office of DoGs re a new central University web-site for postgraduates to enhance communication of information to all postgraduates and supervisors, in order to</p> <ul style="list-style-type: none"> <li>(i) remove duplication at University, Faculty and School levels</li> <li>(ii) in response to feedback from Schools and postgraduate coordinators regarding the difficulty in locating information on the web</li> </ul> <p>Space : remains an ongoing issue in some Schools as Campus 2010 plan evolves</p> <p>Recommended to the DoGS that IP be included in Annual Progress Forms; DoGS will introduce a University form, to replace Faculty specific forms in Semester 2</p> <p>Delays with Ethics approval is outside Faculty control but has been flagged with the DoGS</p>
<p><b>Faculty's evaluation of the success of action taken</b></p>	<p>2000 Research students surveys identify 83% overall satisfaction in Faculty of Science</p> <p>SUPRA President (member of PGSC) has identified Faculty's reviews of Schools, and Policy on Minimum Resources, as initiatives that SUPRA would welcome in all Faculties in the University</p> <p>The appointment of the DoGS in January 2003 has had a major positive impact on postgraduate research training and issues identified at School reviews, and discussed with the DoGS at the PGSC, have generated positive outcomes including: introduction of mid-year scholarships, Flexis data-base, University postgraduate induction days.</p> <p>The lack of access to a single, central postgraduate data base has hampered optimal management of candidatures by the Faculty; the release of the new Flexis data-base in late 2003 is expected to have a significant, positive impact on research training in the Faculty.</p> <p>One of two 2002 Vice-Chancellor's Awards for Excellence in Higher Degree Supervision awarded to Faculty of Science staff member.</p>

<p><b>Recommendation 12</b></p>	<p>The Faculty should investigate how it can improve management of Combined degrees, including how to improve communications with students enrolled on these degrees, and, communications with the collaborating faculties.</p>
<p><b>Action taken by the Faculty</b></p>	<p>Faculty has a number of Associate Deans who are responsible for providing course advice and academic counselling for students in the various Faculty degree programs. In response to the Phase 1 Review recommendations, an Associate Dean has now been assigned responsibility for each of the combined degree programs. The Associate Dean responsible for each program has established contact with the appropriate advisor from the other Faculty involved in the combined degree.</p> <p>A list of names and contact details of those responsible for each combined degree has been distributed among all staff involved in student advising.</p>
<p><b>Further action planned but not yet implemented (if appropriate)</b></p>	<p>The Associate Dean responsible for each program will be identified in the Faculty handbook and on the Faculty web site.</p>
<p><b>Faculty's evaluation of the success of action taken</b></p>	<p>Students from combined degree programs who seek advice are now dealt with more quickly as the responsible Associate Dean is familiar with the particular issues associated with the program and knows who to contact in the 'partner Faculty' if this is necessary.</p>