Report on the Review of the School of Earth and Geographical Sciences

**Date of review:** October 22nd – 24th 2007

**Disciplines covered by this review:** Geology, Geography and Soil Science

**Membership of the Review Committee:**

- **Chair,** Professor Robyn Owens, Pro Vice-Chancellor (Research & Research Training), UWA
- **Member,** Professor Bob Henderson, School of Earth and Environmental Sciences, James Cook University, Townsville QLD
- **Member,** Professor Stephen Nortcliff, Department of Soil Science, University of Reading, Reading UK
- **Member,** Professor Martin Williams, Geographical and Environmental Studies, The University of Adelaide, Adelaide SA
- **Dean,** Professor Alistar Robertson
- **Executive Officer,** Mrs Christine Richardson, Faculty Manager
Executive Summary

The School of Earth and Geographical Sciences was established in 2002 as an amalgamation of the Departments of Geography, Geology and Soil Science. Since then considerable progress has been made towards unifying the culture and practices of the previous departments by seeking efficiencies in the delivery of the teaching programs and synergies in the research endeavours. The School now finds itself firmly placed at the centre of the University's strategic priorities, with strengths in minerals and energy and the broad environmental sciences portfolio. It is from this platform that the Review Committee has studied the submissions and data made available to it and now makes recommendations that are designed to help the School achieve the outstanding performance and reputation that are well within its grasp.

The Review Committee recommends that the School re-organise into two broad discipline areas that would map directly onto institutional priorities. The internal structure would be designed to ensure disciplinary leadership and outstanding outcomes, while also achieving functional excellence in research and teaching related to the resource industries and the environment. Professional tools such as an external Board, a workload model, effective use of the PDR process, and project management relating to infrastructure and resources are recommended as mechanisms for achieving such excellence.

The high quality of the School’s teaching and learning outcomes were noted by external stakeholders and current students alike. Nevertheless, there were a number of quality assurance issues identified during the review that should be addressed by the School, especially as it seeks to service more international students.

The School’s research outputs and outcomes range from very good to excellent. With a little tuning, and given the extremely favourable external environment in which the School operates, the School could achieve an outstanding position in Australia and an outstanding reputation worldwide. The recommendations around the research portfolio highlight the need for a deep engagement in collaboration both within the School, across the nation, and with industries, and for an active programme of mentoring to ensure optimal outcomes and a sustainable research future.
Recommendations

Recommendation 1: The review committee advises a revised School organisational and management structure as follows:

a. The three designated discipline areas should be consolidated into two: a cluster that focuses on minerals and energy, including geology and geophysics, and a cluster that focuses on environmental science, including soil and water systems, climate, landscape and coastal zone dynamics and urban and regional planning.

b. The School vision should be encapsulated as Earth System Science and continued progress in integrative teaching and research across the whole School should remain a prime objective.

c. Leadership within the School would be advantaged by the formal appointment of two Deputy Heads of School, each charged with a discipline cluster leadership role and with management responsibilities for human, financial and infrastructure devolved from the Head of School. The detail of devolvement will need to be developed but it should be identical with respect to the responsibilities of the two Deputy Heads of School.

d. Deputy Heads should accept an expectation of School headship, either by rotation or by future appointment, thereby ameliorating the problem of headship succession.

e. Organisational structure within the disciplines should be determined by the Planning & Budget Committee, informed by wide staff consultation, with the dual objectives of effective representation and efficiency.

f. The role of the School headship should focus on integrated management and leadership of the School as a whole, and in fostering the objectives and mission of the School within the Faculty of Natural and Agricultural Sciences, within the senior management structure of the institution, and through engagement with external stakeholders.

g. Integrated planning and delivery of Teaching & Learning, and Research & Research Training, across the School is best served by the current committee structure but would be advantaged by leadership of the Deputy Heads acting as the committee chairs and by designated staff representation. Annual rotation of the Deputy Heads with regard to chairmanship, and a membership review, of these two committees would enhance across-school integration of its business delivery by discipline cluster and by the generic business threads of teaching & learning and research & research training.
h. The current management structure of support staff reporting to the School Manager should be retained and it would be advantageous for the School Manager to attend meetings within the School that relate to the delivery of that role.

i. The Planning & Budget Committee has the key role of guiding School operations and planning. Its recommended membership is Head of School, the two Deputy Heads of School, and the School Manager. This committee, through its membership, would be across the full compass of School affairs and ideally placed to deliver the role required of it.

**Recommendation 2:** The School, through wide consultation, should adopt a new name. Earth & Environmental Science and Earth Systems Science are offered as suggestions.

**Recommendation 3:** The School should institute, as soon as possible, an annual workload model for the academic staff, registering undergraduate teaching duties and postgraduate supervision for individual staff members. The workload dataset should be prospective, and captured at the commencement of each academic year. It must be transparently available to all academic staff and articulated with the institutional performance management process (PDR) as it applies to individuals. The workload model should be used by the Planning & Budget Committee to inform the allocation of casual teaching assistance across the School.

**Recommendation 4:**

a. A consultant should be hired by the University to investigate and document the problems of self/sectional interest and lack of communication, at the expense of the School, displayed by individual staff in the geosciences, and

b. these issues should be addressed with urgency through the PDR process, or if this is not effective, via other processes.

**Recommendation 5:** The School should develop and introduce, as soon as practicable, a scheme for the annual distribution of research maintenance funding to academic staff. Outcomes need to be formula based, recognize research performance, and transparent to staff. The budget allocation for this purpose should be set annually at levels that can be afforded by the School.

**Recommendation 6:** The PDR process should be applied annually to all support staff.

**Recommendation 7:** The PDR process, as applied to support staff, should capture and record infrastructure problems and deficiencies,
with a consolidated list maintained by the School Manager and addressed by the Planning & Budget Committee.

**Recommendation 8:** The School should build and maintain a web-based inventory of in-house research infrastructure, designed to encourage its use.

**Recommendation 9:** Co-location should be recognized at institutional level as an intermediate to long-term objective in infrastructure provision for the School. The additional costs of running the School due to the split location should be accurately estimated, with an offset for this impost built into the Faculty financial plan.

**Recommendation 10:** The Faculty, assisted by the School, the Director of Minerals and Energy and the PVC Research Initiatives should investigate the establishment of a broadly based School Advisory Board, initially through informal discussion with stakeholders.

**Recommendation 11:** The School should continue to review its teaching provision in the light of the changing educational background of undergraduate students, the current and future staff availability and the post-graduation prospects of the students.

**Recommendation 12:** The School, assisted by the Faculty, should provide students with information on unit content, unit linkages and progression requirements to enable them to take informed decisions.

**Recommendation 13:** The School should continue to provide an integrative undergraduate fieldwork programme that involves both disciplinary and cross-disciplinary curriculum, with the involvement of research, teaching, technical and administrative staff from all disciplines.

**Recommendation 14:** To facilitate the successful provision of fieldwork teaching within the undergraduate programmes, the School, through the Faculty, should urge the University to revert to the two-week mid-Semester break in both semesters.

**Recommendation 15:** The School should require all teaching staff to use the WebCT facility in support of their teaching. Where necessary, training and support should be provided.

**Recommendation 16:** Given the increasing importance of web-based information for students, the School, through the Faculty, should press the University to ensure that the computing infrastructure is capable of supporting the rapidly expanding demand from staff and students.
**Recommendation 17:** The School should establish a framework for the moderation of all assessable work to ensure accuracy and repeatability. Examiners’ meetings should be held at the end of each semester. Where anomalies in assessment practice or results are observed these should be investigated and appropriate action taken under the direction of the Head of School.

**Recommendation 18:** The School’s Teaching & Learning Committee should establish an online database of coursework assessment deadlines to ensure that students are not subject to multiple deadlines over a short time period. The database should record both the date of submission and the date of return of the coursework by the assessors.

**Recommendation 19:** The School should take positive steps to ensure that part-time teaching staff, including postdoctoral research fellows and postgraduate students, are fully involved in the development of the teaching process and are provided with support and mentoring.

**Recommendation 20:** The School should establish a system of peer review across all teaching staff within the School, with a more substantial peer review/mentoring programme for early career staff. It would be useful to integrate such peer review with the PDR process.

**Recommendation 21:** In the context of the current research developments in the School and the employment opportunities for graduates, the School should plan for potential cross-disciplinary appointments in the broad areas of spatial analysis, biogeochemistry and environmental change.

**Recommendation 22:** The School should develop, in collaboration with a range of potential employers from across the broad subject range within the School, two 6 credit point work practicum units as part of the degree programmes.

**Recommendation 23:** The School’s Research & Research Training Committee should develop a strategy for increasing the number of higher degree by research students within the School and should monitor progress against planned targets.

**Recommendation 24:** All academic members of the School should be encouraged to develop strategic alliances with productive and successful researchers across Australia with a view to enhancing their opportunities for joint research and joint research proposals.

**Recommendation 25:** The School should actively encourage internal refereeing of all competitive research grant proposals.
**Recommendation 26:** All senior staff (Professors and Associate Professors) should be partnered with at least one junior staff member (teaching & research or research-only) to mentor the development of track records, grant applications, and career development.

**Recommendation 27:** The School’s Planning & Budget Committee should develop a cyclical equipment replacement strategy to ensure a modern and sustainable infrastructure future.

**Recommendation 28:** The School should develop procedures for advising, encouraging and warning junior staff about the opportunities and pitfalls of manuscript preparation, and offer financial help to research students and research fellows to maximize the time spent on non-routine work.

**Recommendation 29:** The two major discipline groups outlined in Recommendation 1a should organize vibrant seminar programmes involving presentations by staff, research students and industry speakers, with compulsory presence of research students as part of their Confirmation of Candidature, and a compulsory Completion Seminar by each completing research student.

**Recommendation 30:** The School should organize an Annual Industry Contact Day, designed to allow for a two-way communication between industry and the School to highlight the research questions and the research achievements of both groups.

**Recommendation 31:** The School should negotiate with the University’s Statistics Clinic on the best way to provide statistical training and advice to the research students.

**Recommendation 32:** The School should develop a named annual public lecture, similar to the Gentilli lecture, to promote the activities of the minerals and energy group to the broad public.