

## 2005 Reports

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### INNOVATION IN TEACHING GRANTS

#### **ASSOCIATE PROFESSOR MURRAY BARCLAY COMPUTER GRAPHIC-AIDED LEARNING OF CLINICAL PHARMACOLOGY PRINCIPLES**

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Certain basic principles and concepts of pharmacokinetics and pharmacodynamics need to be understood by prescribers to enable rational, individualised drug therapy. These concepts can be difficult to understand with traditional Clinical Pharmacology teaching. Use of user-interactive computer graphics may enhance this understanding. A collaboration was formed between the Department of Clinical Pharmacology and HITLabNZ, who are specialists in innovative computer interfaces, to develop a series of such interactive graphics webpages using Macromedia Flash software, to be delivered via the Internet ([www.icp.org.nz](http://www.icp.org.nz)) and via PDA platforms. This included 27 web-pages to help understanding of 10 major topics. The website is undergoing testing with 5th year medical students in the Clinical Pharmacology lecture and tutorial series. There has been strong positive feedback for the value of this technology in learning. Use of computer user-interactive graphics for teaching aspects of Clinical Pharmacology is an exciting innovation that should help improve speed, depth and enjoyment of learning. At this stage it is seen as a useful adjunct to, rather than replacement for, traditional teaching, recognising that one mode of teaching delivery may not suit everyone.

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#### **DR CHRIS BUTTON DEVELOPMENT OF COURSE INFORMATION AND TEACHING RESOURCES THROUGH COMPUTER GUIDED LEARNING**

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This project involved the design and creation of DVD learning resource for use in several coaching related papers offered by the School of Physical Education. The DVD contains video footage of coaches and athletes in 4 training sessions in different sports (i.e., swimming, golf, soccer, and, athletics). The examples help to highlight key ideas in subjects such as pedagogy and motor learning thereby enhancing student understanding. The resource has been piloted in two Distance Learning papers with positive feedback from both staff and students and it is also planned for use with Dunedin-based students in the future. Reflecting back on initial plans, the project was scaled down significantly as a large amount of work is needed to design a quality learning resource. The advice of HEDC staff was particularly valuable in that process and whilst we have not been able to achieve all the aims that were initially documented, we are certainly pleased with what has been accomplished.

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#### **DR IAN MCANDREW INTERACTIVE SIMULATED NEGOTIATION PROJECT**

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The concept for this project arose out of my long-standing use of a comprehensive negotiation simulation exercise for the teaching of negotiations. The purpose of the project was to produce a teaching DVD based on the simulation setting, illustrating negotiation phases, strategies, tactics,

conventions, and ethics, and incorporating alternative scenarios to which students could react in a stop-action context. The story was semi-scripted from a videotaped version of the simulation drawn from a training programme conducted for a group of experienced practitioners. A combination of experienced negotiators and improvisational actors was used to reproduce the story in a sequence of scenes, each with identified learning objectives. CALT funding was used to cover expenses of the negotiators who participated, and to employ the professional actors in an effort to avoid the “amateurishness” that usually burdens negotiation education videos. HEDC educational media staff directed, filmed and edited the production.

It is well established that negotiation is best taught experientially. The basic DVD is proving invaluable in teaching negotiation skills in a way that engages students, and greatly enhances the value to students of participating in the original negotiation simulation exercise.

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**MS JENNY MCDONALD**  
**GENERIC DATABASE WEB APPLICATION FOR TEACHING AND LEARNING**

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This project has not gone in the direction originally intended, nor was the grant awarded ever actually taken up. Nonetheless a lot of very useful work is contributing on an ongoing basis to a range of CALT and non-CALT projects as a result of the idea of creating generic solutions for teachers to use to create custom online databases. Feedback from students and staff on databases created to date suggest:

- Online databases seem most suitable for teaching/learning applications where specific items and attribute information about the items need to be combined to make sense of particular concepts/ideas or procedures.

- The level of benefit reported by students in having access to a database is directly proportional to the number of items in the database and their relevance to course work.
- Students and staff will not use databases that do not return results they expect/are looking for.
- The most successful and most used projects seem to be those where students are actively involved in populating/creating the database rather than simply recipients of the material in it.
- For students to use a teaching and learning database its use needs to be integral to the course, not optional.

We hope to submit an article for publication based on aspects of this work once we have had the opportunity to trial the database generation tool (2007/08).

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**DR RICHARD MITCHELL**  
**HOTEL A.L.I.V.E.**

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Hotel A.L.I.V.E. (Application for Learning Interactively in a Virtual Environment) is a virtual role play environment (a Hotel) that is the result of a collaboration between the Department of Tourism and Design Studies. This application uses existing public domain MUD (Multi-User Dimension) proprietary software, known as a MOO (a MUD of the Object-Oriented variety) to develop a text- and graphics-based environment. This environment allows small groups of Tourism students to interact with each other in character, role-playing scenarios based on ‘real-world’ interactions between hotel staff and their guests (both played by students). These interactions and the environment are integrated with a

lecture programme that introduces and applies management theory in the field of hotel/resort management. For Design Studies students the A.L.I.V.E. project represents a real world application of the theoretical foundations learnt in class, providing interaction with a real client (TOUR303 coordinator) and feedback from users (TOUR303 students). Two papers were involved from Design Studies: DESI305, who designed the visual elements of the hotel; and DESI402, who designed elements that assisted in the interactions.

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## **DR RUTH NAPPER**

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On Line Microscopy: an innovative method to deliver advanced microscopy to third year anatomy students

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## **DR DAVID ORLOVICH A TEACHING DATABASE OF SLIME MOULDS**

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This proposal supported the development of a web-based database for storage of digital images and descriptions of plasmodial slime moulds (myxomycetes). Students in BTNY 322 do a six-week exercise to collect, photograph and identify the numerous slime moulds that grow on the bark of living trees, semi-decayed leaf and wood litter. Students develop a good knowledge of the myxomycetes, and an ability to collect, identify and illustrate them. Students upload their own records (including digital images, descriptions, measurements, notes etc) to the database, and can print professional reports based on their own collections. Students contribute to, and feel part of, a growing educational and scientific resource.

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## **DAVID ORLOVICH A WEB-BASED INTERACTIVE KEY TO DUNG FUNGI**

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Students in BTNY 322 do a five-week exercise to collect and identify the numerous fungi that grow on animal dung. Students develop an in-depth knowledge of the main groups of fungi, and ability to identify and illustrate them. We have developed a database of images and descriptions of the species students are likely to encounter. Students can upload their own records (including digital images, descriptions, measurements, notes etc) to the database. In this way students contribute to, and feel part of, a growing educational and scientific resource.

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## **DR MARYAM PURVIS PROMOTING ACTIVE LEARNING IN LECTURE ROOMS IN LARGE COURSES**

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The goal of this research is to increase student engagement and participation in the large lecture rooms. To accomplish this goal, we proposed to use Classroom Performance System (CPS) provided by H-ITT ([www.h-itt.com](http://www.h-itt.com)). By using this technology (clicker technology), the students are encouraged to respond (in an anonymous way) to a set of questions associated with the present and past lecture topics. The result of the students' response is made available immediately to both instructors and students. By looking at these results, the students can know where they stand with regard to their knowledge of a particular topic as well as where they stand in the class. Also, the instructors know if more elaboration on a particular topic is required.

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**ASSOCIATE PROFESSOR IAN SMITH**  
**WEB-BASED TEACHING OF ARTEFACT IDENTIFICATION AND CLASSIFICATION**  
**ARTEFACT TYPOLOGY TUTOR**

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*The Web-based teaching of Artefact Identification and Classification Artefact Typology Tutor* is a web-based tool that assists learning to identify and classify artefacts from archaeological sites. It guides students through the selection of descriptive attributes for various artefact classes, leading them to the appropriate place in a virtual reference collection of digital images and descriptive data on type specimens so that they can find the best match for an archaeological specimen. Artefact classes currently included are Pacific stone adzes, Pacific fish hooks, New Zealand flaked stone tools, and 19th century European ceramic vessels. The simple generic structure underlying Artefact Typology Tutor allows for the easy addition of further artefact classes and type specimens.

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**MR ROB WASS**  
**BEHAVING SCIENTIFICALLY**

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Historically, the study of animal behaviour has been regarded as a "soft-science", the perception being that the conclusions drawn were not necessarily based on "hard" quantitative, repeatable data. In this project, students learnt how to study animal behaviour scientifically by conducting an authentic task that represented the true manner in which many animal behaviourists gather data. The students discovered for themselves that the study of animal behaviour is as rigorous as any of the other more traditional scientific disciplines, and they also learnt generic skills that will be of benefit to them as researchers.

Using the interactive computer programme, students (on their own or in groups) viewed actual video footage of animals and learnt how to describe (using subjective language) the behaviours that they observed. They then created a catalogue of these behaviours (known as an ethogram) and a coloured slider bar (which is a visual representation of the time spent in each of these behaviours). In this way the students compared their results with the rest of the class and observed data that was not only objective, but also quantifiable and repeatable.

This programme has been successfully integrated into the BIOL112 laboratory class (approximately 300 students) in 2005 and 2006. Overall, the evaluation data and the summary comments were very positive.

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**INTERNATIONALISATION OF THE CURRICULUM GRANTS**

**DR PHIL BISHOP**  
**COMPARATIVE INVESTIGATION INTO PRACTICAL TEACHING METHODOLOGIES**  
**AND CURRICULUM STANDARDS IN BIOLOGY AT TOP OVERSEAS UNIVERSITIES**

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Seven universities were visited (University College London, Oxford University, University of Edinburgh, University of Glasgow, University of California (LA), University of Sydney and the

University of New South Wales) and meetings were held between myself and other first and/or second year directors/course coordinators. In addition, I observed a biology practical class and lecture at each institution. In the largest first year biology class in Europe (626 students, Glasgow University) there was the extensive use of electronic scanning of students' assignments and assessments. On my return to Otago a meeting was held with the coordinators of first year papers, ITS, and the Examinations Office to determine if this could be achieved at Otago. Further collaboration in the form of teaching-staff exchanges with Glasgow University is underway.

The quality of the course materials and the level of teaching and IT facilities places Otago at the top of the list of the institutions visited. Course materials and examination papers were collected at all the institutions visited and it is remarkable how consistent these distant universities are in terms of content and level of first year Biology. It was interesting to note that all the universities visited utilised senior academics as "hands-on" laboratory leaders.

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### **PROFESSOR THOMAS BLEY**

#### **PROFESSOR JOHN MOORFIELD TE TUMU PARTICIPATION IN INTERNATIONAL WEEK 31 JANUARY TO 4 FEBRUARY, 2005, UNIVERSITY OF ALBERTA, CANADA**

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The grant of \$12,700 was used for a group of staff and students to travel to Canada to participate in International Week at the University of Alberta in Edmonton. The performances at the keynote address for the Prince of Swaziland and also the final performance was organised around a symposium of academics from both institutions to present papers and workshops on aspects of indigenous performing arts and other cultural topics. Te Tumu also promoted the University with several students seeking further information about studying at the University of Otago at both the undergraduate and postgraduate levels.

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### **DR HELEN MORIARTY**

#### **INTERNATIONAL PERSPECTIVES ON CLINICAL SKILLS FOR THE UNDERGRADUATE MEDICAL CURRICULUM**

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This project was designed to gather international perspectives on undergraduate clinical skills teaching for medical students, to inform curriculum change at the University of Otago. Medical teaching institutions world-wide have undergone curriculum change to prepare students for the modern health professional working environment, in the face of shortening in-hospital stay, increased community-based management, practitioner credentialing and clinical accountability which have impacted upon student access to traditional clinical training opportunities. Internationalisation of the medical curriculum should better equip graduates for a career in a global marketplace. This project used literature review, international colleague and key stakeholder consultation to probe issues in clinical skills curriculum development.

The main finding is that the international community is yet to find consensus on: the optimal hierarchy for teaching clinical skills; methods of assessment of proficiency; the minimum skill set and exit standards appropriate for new medical graduates. Clinical skills teaching should be evidence-based, but also appropriate to the local setting and population health. Teaching programmes and assessment tools suitable for adaptation to New Zealand have been identified, and a broad outline for

an integrated skills curriculum was suggested. The University of Otago should embrace the opportunity to join national and international global debate on teaching, assessment and research, educational policy and strategic direction as it develops the clinical skills component of the new undergraduate medical curriculum.

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**JOY RUDLAND**

### **THE ATTITUDES OF STAFF OF THE MEDICAL FACULTY TO PEER TUTORING**

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Peer tutoring is a form of peer-assisted learning. It involves student tutors (of the same or higher year of learning) facilitating the learning of other students. The benefits of peer tutoring have been recognised in the cognitive development of the tutees, and the tutors' cognitive and meta-cognition. However, very little research has been conducted in to the perspective of staff on the formal use of peer tutoring although it has been suggested that teacher support is necessary for successful implementation of peer tutoring schemes. The broad aims of the project were to determine staff perceptions and understanding of peer tutoring and any differences between types/grades of staff. Teaching staff at Dunedin, Christchurch and Wellington Clinical Medical Schools participated in the project. Results showed that there was qualified support for peer tutoring schemes. Some staff felt that it was not the student's roles. The disadvantages highlighted by staff members related to their concerns that student tutees would be given misinformation or that the information would be poorly delivered by an inexperienced tutor. In conclusion, the concern that it is not the student's role to be a teacher is debatable although it is the opinion of the authors and current medical education policy documentation that students need undergraduate training in education to fulfill their postgraduate teaching commitments. The concerns of staff are not supported by the literature and it is somewhat ironic that staff felt that students needed training in educational delivery although their own educational training is often minimal.

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**DR BARRIE PEAKE**

### **CARBON CYCLING IN THE AQUATIC ENVIRONMENT**

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This proposal was abandoned, after initial visits to the partner universities, because circumstances beyond Dr Peake's control made the project not viable.

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**DR KATH RYAN**

### **TEACHING SOCIAL SCIENCE TO UNDERGRADUATE PHARMACY STUDENTS**

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The School of Pharmacy is engaged in teaching Social Pharmacy to its undergraduate pharmacy students. Social Pharmacy is a relatively new discipline that draws upon the theories and methodologies from the social sciences and applies them to the practice of pharmacy. It covers a broad range of topics pertinent to pharmacy in a variety of social contexts. A web site ([www.socialpharmacy.otago.ac.nz](http://www.socialpharmacy.otago.ac.nz)) was established to provide an international networking focal point, for teachers involved in teaching the social sciences to pharmacy students. The site includes a custom-built, web-based questionnaire that enables the collection of data related to teaching, curricula and research activities. This questionnaire/survey was designed to be ongoing and electronically self-analysing. Furthermore, the web site was designed to enable the collaborative

sharing of course outlines and teaching resources. This web site will foster collegial networking at an international level amongst faculty engaged in social pharmacy teaching.

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## **RESEARCH INTO UNIVERSITY TEACHING GRANTS**

**DR CHRIS BUTTON**

### **CONSIDERATION OF TEACHING APPROACHES USED IN PRACTICAL PAPERS OF THE PHYSICAL EDUCATION DEGREE**

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A number of different teaching styles exist which can be adopted by movement practitioners to provide students with a supportive learning environment. The aim of this study was to monitor and identify the range of teaching styles employed by tutors of the Practicals papers of the School of Physical Education, University of Otago. A sample of tutors and students gave their perceptions of teaching styles through a modified questionnaire administered at the conclusion of 9 different Practicals papers (e.g., Advanced Resistance Training, Adventure Based Learning, Agility-Speed-Power, Badminton, Bushcraft & Survival, Endurance, Jiu-Jitsu, Snowshoe and Winter Camping, Volleyball). It was found that tutors most commonly employed teaching styles at the Command (or 'reproductive') end of the teaching styles spectrum although Discovery ('productive') styles were also used, but less frequently. A broader range of teaching styles were typically employed in outdoor activity papers (compared to sport-based or athletic training papers) in which tutors and students spend more time engaged in less structured, informal learning activities. It is encouraging that students who may go on to become movement practitioners in the future are exposed to a wide range of pedagogical approaches during their training at the School of Physical Education.

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**MR PAUL HENDRICK**

### **AN INVESTIGATION INTO THE CLINICAL REASONING PROCESSES OF UNDERGRADUATE PHYSIOTHERAPISTS**

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The development of effective clinical reasoning is a key emphasis in undergraduate physiotherapy curricula (Higgs, Burn et al., 2001). As a clinical decision making process it requires students to weigh and assimilate all available information in order to assess and manage patients effectively. It comprises particular knowledge, skills and behaviours that are embedded in a patient centred approach to treatment (Jones 2000). Research indicates that students can become confused by the relation between theoretical knowledge and clinical decision-making (Higgs, Burn, et al. 2001) and there is little evidence on how this competence is learned and developed in undergraduate physiotherapy curriculum. Adopting a hermeneutic perspective, the current study used a qualitative, cross-sectional design to investigate students' experiences and understandings of clinical reasoning at different times during the undergraduate physiotherapy programme. The results show an expected variation in experiences which appears to be dependent upon not only the quality and degree of clinical experiences of the students but also their learning experiences in the curriculum.

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**DR TAMAR MURACHVER**

**STUDENTS' AND SUPERVISORS' PERCEPTIONS OF QUALITY PHD SUPERVISION**

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Students and supervisors were asked about the qualities they believed were important in a supervisor, what they perceived to be the obstacles that arise during PhD supervision, and their perceptions of a good PhD student and supervisor relationship (overview is available at [www.otago.ac.nz/study/phd](http://www.otago.ac.nz/study/phd)). Although there were many more similarities than differences between student and supervisor responses, differences in perspectives were informative. Students often perceived supervisors are being overly concerned with publications and their own reputation, whereas supervisors were less likely to mention this concern. Instead, supervisors spoke about concern for students' future careers. Supervisors often mentioned concerns about students' motivation and commitment, and also expressed unease about students' poor writing skills. Some of the discrepancies between student and supervisor perceptions stem, in part, from lack of more direct communication about expectations during the supervisory process, as well as a misunderstanding of the roles and constraints placed on one another. As an example, only supervisors mentioned funding as an obstacle encountered in PhD supervision, or the concern with maintaining a positive relationship with their students while having to provide critique and criticism.

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**DR RACHEL SPRONKEN-SMITH**

**NAVIGATING THE SYSTEM: UNIVERSITY GUIDANCE AND STUDENT CHOICE ABOUT COURSE OF STUDY**

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In 2005 a CALT grant funded research into the advising systems at Otago. In particular the research aimed to determine how students decide what to study and how the University provides guidance for students in making these decisions. To achieve these aims the study surveyed first and final year undergraduate students (370 during course approval in 2005) to explore how they decided what to study, as well as interviewing 17 staff who worked as course advisors. At time of writing this report the analysis of the student data is complete (see [project report](#)), but data analysis is ongoing for staff perceptions of the advising process. The project has highlighted many issues related to advising at Otago and as a result senior management have instigated a working party to try and address these issues. The research will ultimately yield research publications, when time allows.