

**College of Sciences and Technology**  
**Summary report on the TIF grants from 2001 to 2003**

**Preamble:**

The College of Sciences and Technology has received 41 TIF grants in the three years from 2001 to 2003 inclusive. These grants totalled \$1,304,739. Nineteen out of the 41 were classified as small TIFs (46%), each receiving \$5,000 from TIF with the expectation, at least in Science, that there would be matching funds. The total for the small TIFs is \$95,000.

The projects fall into several categories:

<b>Category</b>	<b>Number of grants as % of total</b>	<b>Funding as % of total available</b>
Curriculum Development	32%	46%
Staff Training	17%	18%
First Year Projects	15%	18%
Web-based materials/courses	10%	2%
Communications projects	10%	5%
Benchmarking projects	7%	5%
Assessment projects	7%	3%
Skills projects	2%	3%

### **Analysis of reports:**

An (ongoing) analysis of the 2001-2003 TIF grants is identifying some interesting trends. To date (July 2004) 17 (41%) have been completed, with a completion rate of 40% for the “small” projects and 33% for the “large” projects. It has, however, been difficult getting hold of reports from the projects even though it was a condition of the funding to provide a final report to the PVC’s office.

Without more information it is difficult to make many comments on the outcomes of the TIF with respect to the College. An overview of what is available would seem to indicate:

- there have been several projects associated with the first year experience and these appear to have made a significant difference to our entering students. In most cases the projects have been evaluated, reviewed, modified and are now in place as core business of the department, school or faculty. This is an important measure for the College.
- many of the small projects in Science have considerable outputs in the form of presentations and publications. This is partly due to the culture in place in Science which encourages teaching developments to be disseminated widely. Veterinary Science has also made a significant effort to disseminate their projects. These are important outcomes for the College.
- of the large projects funded (>\$35K), it would appear that those with a clear indication of project management are better reported and disseminated.

An issue of great interest is that of improving the teaching culture within the College. Of the seven funded projects, only two have been reported. The first is from Mathematics and

Statistics and the project funds (\$5K) helped to develop an information booklet for all casual tutors. A larger project (\$35K) to develop a staff training program for all casuals/new teaching staff in the Faculty of Science is in its second full year, the program consists of a workshop before the semester starts (held twice a year) and an ongoing program of moderated and directed reflection on teaching. This has been reviewed and will be available next year to casual/new teaching staff in Agriculture and Engineering. There have been three projects funded in Architecture (one each year), and these have concentrated on running workshops for casual staff before teaching commences. The outcomes for the workshops is a greatly improved 'good teaching' rank in the SCEQs.

### **Reflections and Recommendations:**

From viewing the reports and talking to some of the project leaders it would appear that the most successful of the projects are those that were either very small in terms of aims and finance (the \$5,000-funded projects) or those that had a significant project management structure embedded in them from the beginning. The College should consider that:

- All projects should have an evaluation strategy within the project proposal.
- Future projects funded with more than \$10,000 should have as part of the project proposal a specific project management structure.
- The College should develop a structure/process in which the evaluation of the project is managed from outside the project group.

**Mary Peat**

**1 July 2004**

## **Publications and presentations**

### ***Refereed Journal papers***

- Britton, S. Coleman, C. E., Ivers, D. J. James, R. W. & Macaskill, C. (2003) Using AcroTeX to provide a structured learning environment for mathematics. Remarkable Delta:03 communications, Derek Holton and Ivan Reilly, International Delta Steering committee, 58-63
- Canfield, PR, and Taylor, RM (2004) *Teaching and Learning at the Faculty of Veterinary Science, University of Sydney*. Journal of Veterinary Medical Education April 2004
- Collins, H and Taylor, R (2002) “*Report on Joint Australasian Veterinary Schools Workshop on Veterinary Graduate Attributes and Learning Outcomes*”, Journal of Veterinary Medical Education
- Franklin, S., Peat, M. & Lewis, (2003) A. Non traditional interventions to stimulate discussion: the use of games and puzzles. *Journal of Biological Education* **37**(2), 79-84
- Hubble, T. C. T., Wyman, D. A., Allen, T., Fitzherbert, J. & Clarke, G. L. A journey to Ardesco – using PBL as a basis for teaching igneous petrology and volcanic hazards analysis. *In preparation for the Journal of Geological Education*
- Lewis, A., Franklin, S. & Peat, M. Putting learning into context: helping education students to learn biology. *Submitted to Australian Science Teachers Journal – November 2003*
- Peat, M., Taylor, C. & Franklin, S. (2005) Re-engineering of undergraduate science curricula to emphasise development of lifelong learning skills. *Innovations in Education and Teaching International* **46** (2) (not out until 2005)
- Sharma, M., Khachan, J., Chan, B. & O’Byrne, J. An investigation of the effectiveness of classroom communication systems in large lecture classes. *In preparation for Australian Journal of Educational Technology*
- Taylor R and Gerzina T(2001) “*Reflections on Assessment*” Synergy Issue 15, pp10-11 Featured as case study in: Ramsden, P (2003) *Learning to teach in higher education*. 2<sup>nd</sup> Ed. Routledge and Farmer, UK
- Taylor, R (2002) “*Animal use in veterinary science teaching*” ANZCCART News, 15:7

### ***Book chapters***

- Fernandez, A. & Peat, M. (2003) Building a responsive and effective service teaching program. In *Partners in Learning*. Proceedings of the 12th Annual Teaching and Learning Forum, 11-12 February 2003. Perth: Edith Cowan University  
[http://www.ecu.edu.au/conferences/tlf/2003/pub/pdf/24\\_Fernandez\\_AnePeat\\_Mary.pdf](http://www.ecu.edu.au/conferences/tlf/2003/pub/pdf/24_Fernandez_AnePeat_Mary.pdf)

### ***University Teaching and Learning Showcase***

- Bosward, K, Hodgson, JL, Hyde, M, Krockenberger, MB, Marcus, G, Norris, J, Taylor R, Windsor, PA, Zuber, M (2003) *Empowering staff and students with case-based teaching and learning*. Vice Chancellors Showcase: Graduates for the world p65
- Canfield, PJ, Krockenberger, MB (2003) *Learning through enquiry. An interactive, student centred, group approach for the solving of problems in Veterinary Clinical Pathology*. College of Science and Technology Teaching and Learning Showcase Nov 2003 p10
- Collier, M, Taylor, R, Hyde, M, Prosser, M and Sheehy, P (2003) *The conception and approach to learning of second year veterinary science students* Vice Chancellors Showcase: Graduates for the world p23

- Collier, M, Taylor, R, Hyde, M, Sheehy, P and Prosser, M (2003) *The conception and approach to learning of second year veterinary science students in anatomy and physiology*. College of Science and Technology Showcase p16
- Hyde, M. and Taylor, R. (2001) *Tinkering with the curriculum: improving student learning in Animal Science*. Vice Chancellor's Teaching Showcase 2001 Pp 26
- Hyde, M and Taylor, R (2003) *Its all about change*. Australian Universities Teaching Award Finalists Conference, Canberra, Dec 2003
- Kay, J. & Miller, A. (2001) A Mentor Programme – an opportunity for higher year students to assist new students and gain insights into their own learning. Abstracts of the VC's Showcase of Scholarly Inquiry in Teaching and Learning, University of Sydney, pg 94
- Norris, J, Hodgson, J, and Marcus, G (2003) *Case-based applied veterinary microbiology online (CAVMOLS)*. Vice Chancellors Showcase: Graduates for the world p11
- Sharma, M. D., O'Byrne, J. & Cooper, I.(2003) *Using lab-based projects for teaching and learning problem solving skills in large first year classes*, College of Sciences and Technology Teaching and Learning Showcase, University of Sydney, pp11
- Sharma, M.D., Nagarajan, M., Stewart, C. & James, B.(2001) *An investigation of the undergraduate laboratory program*, Abstracts of the Showcase of Scholarly Inquiry in Teaching and Learning, University of Sydney, pg 37
- Taylor, C. E., Peat, M., Stewart, C. & Fernandez, A. (2003) Enhancing the employability of Science graduates: a Faculty of Science initiative
- Taylor, R. (2001) *Can small changes to assessment encourage students to take deep approaches to learning?* Vice Chancellor's Teaching Showcase 2001 Pp60
- Taylor, R. (2001) *The impact of the nature of assessment tasks on student perceptions and approaches to learning*. Vice Chancellor's Teaching Showcase 2001 Pp44
- Taylor, Barton, J, Bosward, K et al (2003) *Developing graduate attributes in team work throughout a professional curriculum* Vice Chancellors Showcase: Graduates for the world p39
- Taylor, R., Hyde, M., Sheehy, P., Collier, M., Cattle, S. and Maxwell, C. (2001) *The influence of learning context on student learning approaches and the quality of learning outcomes*. Vice Chancellor's Teaching Showcase 2001 Pp61
- Taylor, R, and Marcus, G (2003) *Learning through inquiry in groups*. College of Science and Technology Teaching and Learning Showcase Nov 2003 p11
- Taylor, R and Maxwell, C (2003) *Faculty culture and excellence in teaching and learning*. College of Science and Technology Showcase p13
- Windsor, P (2003) *Development of a global industry-focused case based team-learning approach to the teaching of livestock animal health and production in Veterinary science*. Vice Chancellors Showcase: Graduates for the world p62
- Windsor, P and Taylor RM (2003) *Challenges in introduction of case based learning in a new course within a professional curriculum*. College of Science and Technology Teaching and Learning Showcase Nov 2003 p14
- Zaki, S (2003) *Teaching clinical problem solving to veterinary science students prior to their clinical year: an integrated case-based approach*. College of Science and Technology Teaching and Learning Showcase Nov 2003 p15

### ***Conference presentations***

- Britton, S. & Coleman, C. (2003) Using AcroTeX to provide a structured learning environment for mathematics. Remarkable Delta:03: Fourth Southern Hemisphere Symposium on Undergraduate Mathematics and Statistics Teaching and Learning, New Zealand, November 2003
- Coleman, C. (2001) Web-based mathematics service courses. Presented to SUTMEG seminar, December 2001
- Feletti, G., Taylor, R., Hodgson, D., Collins, H., Farrow, B., Sangster, N. (2002) *Progress on Graduate Attributes at Sydney University*, "Curriculum alignment", "Summary of teaching issues at Sydney" "Validating Graduate Attributes" "Role of attributes in registration, accreditation, recognition of overseas graduates, benchmarking" "Working with the profession to develop attributes" Presentations at the first Australasian Veterinary Schools Workshop on Graduate Attributes and Learning Outcomes, Sydney, January 2002
- Fernandez, A., Peat, M., George, A., Sharma, M., Franklin, S. & Taylor, D. (2002) *Teaching in Faculties: making science relevant for professional degree programs*. Poster presentation and paper in Proceedings of the Scholarly Inquiry in Flexible Science Teaching and Learning Symposium, Sydney: UniServe science, 79-80
- Hubble T.C.T., Wyman, D.A. Clarke G.L. & Allen T. (2003) A Journey to Ardesco. Cities on Volcanoes III, Hilo, Hawaii USA (July 2003)
- Hubble T.C.T. (2003) Maintaining Student Interest in the geosciences: can curriculum reform help? A progress report from the Antipodes. GACMAC 2003 – Conference Abstracts of the 48th Annual Conference of the Geological Association of Canada and the Mineralogical Association of Canada – Vancouver (May 2003)
- Hyde, M and Taylor, R (2000) *Assessment strategies to improve learning outcomes*. Proc. 4<sup>th</sup> Annual DETYA National Teaching Forum (Australian Association of University Teaching Conference).
- Kay, J. & Miller, A. (2002) A Mentor Program in CS1. In Proceedings of ITiCSE, 9-14
- Sharma, M.D., Stewart, C., Nagarajan, M. & James, B. (2001) *Student expectations of the laboratory program*, AAPT Summer Mtg, Rochester, NY, USA, *Announcer*, 31, pg 68
- Sharma, M., Khachan, J., Chan, B., Stewart, C. R., Hogg, K. & O'Byrne, J. (2002) A classroom communication system for large first year physics classes. Proceeding of the 15<sup>th</sup> Australian Institute of Physics congress, Sydney, pp247-249, ISBN 0-9598064-4-X
- Sharma, M., Khachan, J., Chan, B., Stewart, C. R., Hogg, K. & O'Byrne, J. (2002) Interactive lecturing using a classroom communication system. Proceedings of Research and Development into University Science Teaching and Learning conference, ISBN: 1 86487 490 2, UniServe Science, Sydney, pp 87-89
- Sharma, M., Khachan, J., Chan, B., Stewart, C. R. & O'Byrne, J.
- Stewart, C., George, A. & Peat, M. (2004) *Supporting beginning teachers to support student learning in large first year science classes* Refereed paper accepted for 8th Pacific Rim First Year in Higher Education Conference to be held 14-16 July 2004 at Monash University
- Taylor, D. (2003) Presentation at the annual TeX User Group meeting, July 2003, Hawaii, USA
- Taylor, R (2002) "Using assessment to influence the way students learn" Proceedings, Australian Veterinary Conference, Adelaide, May 2002
- Taylor, R (2002) *Using evidence to improve students approaches to learning* (and the teaching culture), Australian Universities Teaching Award Finalists Conference, Canberra, Dec 2002
- Taylor, R (2002) "Veterinary Science education for the new millenium" Proceedings, Australian Veterinary Conference, Adelaide

***Faculty/University/Invited Seminar***

- Baguley, J and Feletti, G (2004) *Using feedback from the rotations to improve the program*. Partner Practitioner Conference of the Faculty of Veterinary Science, July 2004
- Canfield, P, Krockengberger, M and Bosward, K (2004) *Host –pathogen-environment interactions as a basis for investigating and understanding ( researching ) animal diseases and its application to the teaching of “Principle of Disease ( VET2013) and Veterinary Conservation Biology ( VET 2015)*. Faculty of Veterinary Science Research Led teaching Showcase
- Collier, M (2004) *Critical evaluation of research material by students of Animal Science*. Faculty of Veterinary Science Research Led Teaching Showcase June 2004
- Collins, H (2001) Putting principles into practice-teaching alignment in the new BVSc. How do learning aims and outcomes help to develop Graduate Attributes? Faculty Teaching and Learning Day, June 2001
- Dixon, R (2002) *Digitisation is not a congenital malformation: progress toward the virtual animal for teaching*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002
- Feletti, G (2001) *Using Grade Descriptors to Assess Satisfactory/Marginal/Unsatisfactory Performance in Clinical Practice*. Faculty of Veterinary Science Training Workshop, Nov 2001
- Feletti, G and Robson, M (2004) *Improving the process of assessing interns on extramural rotations*. Partner Practitioner Conference of the Faculty of Veterinary Science, July 2004
- Feletti, G and Sangster N (2001) *Development of assessments for case based learning*. Faculty of Veterinary Science Training Workshop, Nov 2001
- Feletti, G and Taylor, R (2001) *Development of Assessment Tasks that Support Quality Learning* A workshop for Veterinary Science Faculty, Aug 2001
- Feletti, G and Taylor R (2002) *Implementing Grade Descriptors for Clinical Practice*. Faculty of Veterinary Science Training Workshop March 2002
- Feletti, G and Taylor R (2002) *Review criteria for Assessment of Clinical Practice*. Faculty of Veterinary Science Training Workshop. July 2002
- Fernandez, A. & Peat, M. (2003) Building a responsive and effective service teaching program. *Teaching and Learning Forum 2003: Partners in Learning*, February 2003, Perth, W.A.
- Gasser, R.B., Beveridge, I., Sangster, N.C. & Coleman, G. (2002) Veterinary parasitology teaching in eastern Australia. *Veterinary Parasitology* 108: 295-307
- Hodgson, D, Baguley, J, Windsor, P, Mendels, L, Ratcliffe, R, Cross, G, Dart, A, Robson, M (2003) *Year 5 unit reports by unit of study coordinators and students and presentation of new curriculum for 2004*. Teaching and learning development day, Faculty of Veterinary Science, June 2003.
- Hodgson, J, Mills, P, Hendry, G, Crowe, C, Taylor, R, Windsor, P, Krockenberger, M, Norris, J (2003) *Learning in groups (presentations on research in units using groups)*. Faculty of Veterinary Science Teaching and Learning Development Workshop, Dec 2003

- Hodgson, J and Norris, J (2004) *Research Led teaching - Informing Veterinary Microbiology*. Faculty of Veterinary Science Research Led teaching Showcase
- Hubble T.C.T. (2003) Using Problem-Based Learning to Drive Curriculum Change. SciFER Series, Faculty of Science, The University of Sydney (April 2003).
- Hubble T.C.T. (2004) Curricula Can Change and PBL can help you change them. Invited seminar for the China Scholarship Council Program Teaching Sciences in English, University of Sydney. (May 2004)
- Krockenberger, M (2002) *Integration by case- based learning ICAPs*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002
- Marcus, G (2004) *Students perceptions of online case based learning in Veterinary Pathology*. Faculty of Veterinary Science Research Led teaching Showcase
- McGee, P. (2004) “Integrated teaching in the plant sciences”. For SCIFER (Science Faculty Research Group), May 2004
- McGreevy, P (2002) *Adding value to OLIVER records*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002
- Norris, J (2002) *Veterinary online interactive learning system*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002
- Peat, M. & Fernandez, A. (2002) “Responsive and effective curriculum reform: building and evaluating models for improving science teaching”. For SCIFER (Science Faculty Research Group), March 2002
- Peat, M., Fernandez, A., Stewart, C. & Taylor, C. E. (2003) Faculty of Science project: enhancing the employability of Science graduates: increasing the awareness of staff and students to the needs of the employers; given to the Science Librarians, August 2003
- Prosser, M and Taylor, R (2001) *Development of grade descriptors for assessment tasks*. Faculty of Veterinary Science Training Workshop Sep 2001
- Radford, D. (2001) Provision of online tutorials for first-year Chemistry students. Seminar in Faculty of Science’s Teaching Development Grant seminar series
- Sheehy, P (2004) *Research-led teaching in practical classes for molecular techniques in Cell Biology 1B*. Faculty of Veterinary Science Research Led Teaching Showcase June 2004
- Taylor, R (2001) *Teaching into the future: shaping the next generation of veterinarians*. Faculty Teaching Showcase for Veterinary Schools Accreditation Committee, Sep 2001, University of Sydney
- Taylor, R (2001) “Assessment matters” Faculty teaching development day, November 2001
- Taylor, R (2002) *Developing and using Grade Descriptors for Assessment*. Faculty of Veterinary Science Teaching and Learning Development Workshop August 2002
- Taylor, R (2002) *Assessment to change learning. The impact of the nature of assessment tasks on student perceptions and approaches to learning*. Faculty of Education Teaching and Learning Development Day, Nov 2002
- Taylor, R (2002) *Starting right: inquiry learning in Yr1&2*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002
- Taylor, R (2002) *Using evidence to improve learning*. Faculty of Health Science Teaching and Learning Development day, July 2002
- Taylor, R (2002) *Assessment to change learning. The impact of the nature of assessment tasks on student perceptions and approaches to learning*. Faculty of Education Teaching and Learning Development Day, Nov 2002
- Taylor, R (2003) *Using evidence to change approaches to learning (and the teaching culture)*. Faculty of Engineering Teaching Advance, June 2003

- Taylor, R (2003) *Assessing for deep approaches to learning*. Vice Chancellors awards for Outstanding Teaching Presentations by 2002 prize winners
- Taylor, R (2003) *Assessing for deep approaches to learning*. Faculty of Health Sciences Showcase, Nov 2003
- Taylor, R (2003) *Using evidence to change approaches to learning (and the teaching culture)*. Faculty of Engineering Teaching Advance, June 2003
- Taylor, R (2004) *Improving learning*. School of Veterinary Science, University of Queensland invited seminar, May 2004
- Taylor, R (2004) *Benchmarking and group work*. Faculty of Veterinary Science Research Led Teaching Showcase June 2004
- Taylor, R and Hodgson, D (2004) *Improving the educational experience in extramural rotations*. Partner Practitioner Conference of the Faculty of Veterinary Science, July 2004
- Windsor, P (2002) *Ungulates behaving badly: improving resources to train protectors of our livestock industries*. Faculty of Veterinary Science Online Teaching Showcase, Nov 2002