Technology-Enabled Learning Grants 2015 Winners (projects commencing October 2015)

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Business, Economics and Law  
School: Business  
Project Lead: Professor Karen Benson  
Team Members: Associate Professor Barry Oliver, Dr Jac Birt, Professor Steve Grey  
Project Title: **Concept videos for BCom students**  
Duration: 2 years  
Funding: $198,925  
Start Date: 1 October 2015  
End Date: 29 September 2017  
Short Description: Produce short concept videos for core courses in the Bachelor of Commerce majors in Accounting and Finance.  
Key Words: concept videos, commerce  
Abstract: This project will produce a library of concept videos that will cover core courses in the Bachelor of Commerce majors in Accounting and Finance. Each video will belong to a subject area/learning mode that collectively will form a library available for all BCom students. All academics will have access to the learning nodes that may be used in a variety of scenarios including lecture supplements; replacing basic concept revision; preparation for a flipped classroom; and development of MOOCs. Student learning will become more flexible and allow students to engage in more independent learning. After implementation outcomes of the project will be assessed in terms of student and faculty perceptions as to the usefulness of the learning nodes. Specifically, student interest, perceived intellectual challenge, perceived helpfulness of the nodes and student motivation will be assessed.

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Science  
School: Agricultural and Food Sciences  
Project Lead: Associate Professor Kim Bryceson  
Team Members: Dr Judy Cawdell Smith, Dr Marisa Collins, Dr Bruce D’Arcy, Dr Madan Gupta, Associate Professor Peter Murray, Dr David McNeill, Associate Professor Ron Johnston, Associate Professor Vic Galea, Dr Francois Visser, Associate Professor John Gaughan, Dr Luke Leung, Dr Laura Wendling, Dr Ryo Fufinuma, Dr Rebecca Diete, Dr Miranda Mortlock, Dr Robyn Cave  
Project Title: **The Internet of Things for smart science and agriculture education**  
Theme: Course and Program Enhancement  
Duration: 1.5 years  
Funding: $200,448  
Start Date: 1 October 2015  
End Date: March 2017
Short Description: To build an environmental sensor network at Gatton, enabled by WiFi, and integrated with Blackboard to facilitate web-based teaching modules for various courses across the Faculty of Science that use biophysical data in their teaching.

Key Words: internet-of-things, problem-based, web interfaces

Abstract: This project will develop multifaceted web-based interfaces (including mobile phone apps and problem based learning modules) with the “Internet of Things” technology and real time streaming biophysical data of the UQ Gatton Smart Campus Initiative and Darbalara networks, with Blackboard to produce innovative web-based teaching modules for various courses across the Faculty of Science that use biophysical data in their teaching.

Award: 2015 Technology-Enhanced Learning Grant
Faculty: Health and Behavioural Sciences
School: Health and Rehabilitation Sciences
Project Lead: Dr Emma Finch
Team Members: Dr Tanya Rose, Dr Kyla Brown, Associate Professor Jennifer Fleming, Professor Deborah Theodoros, Associate Professor David Copeland

Project Title: Training students in effective communication strategies via telehealth
Theme: Course and Program Enhancement
Duration: 1 year
Funding: $50,283
Start Date: 1 October 2015
End Date: 30 September 2016

Short Description: To coordinate the use and measure the benefits of using an online video conferencing application (ehab) to train speech pathology students to have conversations with aphasia patients.

Key Words: telehealth, professional communication, clinical skills

Abstract: There has been an increasing move by healthcare providers towards telehealth services (ie. the remote delivery of healthcare services over the internet). In the university environment the use of telehealth technology has the potential to enable healthcare students to interact with patient populations and build valuable clinical communication skills without leaving the university campus. Research has suggested that while speech pathology students have the theoretical knowledge to treat aphasia (an acquired language disorder often resulting from stroke) they are not confident communicating with this clinical population. This project will develop and evaluate a telehealth program to train speech pathology students in strategies for communicating effectively with patients with aphasia, and evaluate the clinical useability of telehealth for student clinical learning. While targeting speech pathology students in this project, the intention is to develop a model to be used for other student cohorts who interact with other clinical populations with a range of communication difficulties. This will contribute to the development of new telehealth-driven approaches to clinical education.
Award: 2015 Technology-Enhanced Learning Grant
Faculty: Science
School: Veterinary Science
Project Lead: Dr Justine Gibson
Team Members: Dr Helen Owen, Dr Dick Wright, Dr Steven Kopp, Dr Katrina Garrett, Dr Ann Thompson

Project Title: VMF (Vertical Modular Framework) for learning and assessment in the clinical sciences

Duration: 2 years
Funding: $143,460
Start Date: 1 October 2015
End Date: 29 September 2017

Short Description: To develop learning materials for veterinary science using an e-learning platform.

Key Words: e-learning, vertical integration, framework

Abstract:
This project will develop a non-discipline specific adaptive e-learning and assessment modular framework for courses in a whole program. An e-learning platform will be used to create a series of modules that allow “simple” tutorials delivered in courses early in programs to be adapted to quite complex clinical scenarios in the later years. This will encourage development of clinical reasoning/critical thinking skills and will ensure vertical integration of programs while increasing the flexibility of study. The project and framework will be evaluated during its development, and after completion by academics and students from medicine, nursing, dentistry, and veterinary science. Student outcomes will also be used in all health care programs at UQ and externally.

Award: 2015 Technology-Enhanced Learning Grant
Faculty: Science
School: Agriculture and Food Sciences
Project Lead: Dr Madan Gupta
Team Members: Professor Peter Adams, Michael Jennings

Project Title: Technology-enhanced learning strategies for real-world mathematics

Theme: Course and Program Enhancement
Duration: 2 years
Funding: $200,000
Start Date: 1 October 2015
End Date: 29 September 2017

Short Description: The development of case studies for Maths using an e-learning platform.

Key Words: mathematics, real-world, technology

Abstract:
Mathematics is a rich and beautiful area of study. However, for many students who require mathematical skills for a range of degree programs, it can be seen as a necessary evil, or even a difficult and demoralizing “hurdle”. Such students often ask Why do we need to learn this stuff? Twenty real-world case studies will be developed to demonstrate the application of mathematics in a wide range of disciplines, including agriculture, business, sciences, health sciences, veterinary sciences, social sciences and engineering. These case studies will be implemented for 4000 students in six large first-year courses at Gatton and St Lucia.
Adaptive e-learning technology will be used to develop e-tutorials based on these case studies to provide engaging and challenging interactive learning experiences. Improved student engagement and learning, higher pass rates, lower attrition rates and greater course satisfaction will be some of the major project benefits.

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Engineering, Architecture and Information Technology  
Project Lead: Associate Professor Lydia Kavanagh  
Team Members: Dr Poh Hillock, Associate Professor Tony Howes, Michael Jennings, Associate Professor Gwen Lawrie, Dr Liza O’Moore, Associate Professor Carl Reidsema, Dr Margaret Wegener, Dr Chris Landorf  
Project Title: Help! – A Blackboard-linked quality assured student communication and response system  
Duration: 1 year  
Funding: $54,200  
Start Date: 1 October 2015  
End Date: 30 September 2016  
Short Description: Development of a customizable communication portal embedded in Blackboard that will direct students to the correct support provider.  
Key Words: student enquiry management, large class communication, help seeking  
Abstract: Help! will be a customizable communication portal embedded in Blackboard that will direct students to the appropriate resource or person (via a form requesting relevant details) to answer their queries. It will replace current ad-hoc systems whereby a student may email everyone connected with a course with a query that could easily be answered through existing resources, and instead generate traceable’ ticket numbers’ for all communications and responses. Help! will direct requests for extensions to the appropriate person, log and store medical certificates and other relevant documentation, reduce email loads and redundant responses, and ensure that the necessary information is submitted in the very first email. The system will allow course coordinators to download a report of Help! usage which can then be used to facilitate understanding the course operation and student concerns. Embedding Help! in Blackboard is expected to increase student engagement with course-related resources.

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Humanities and Social Sciences  
School: Communication and Arts  
Project Lead: Kerry Kilner  
Project Team: Professor David Carter, Dr Stephen Carleton, Dr Bernadette Cochrane, Dr Kim Wilkins, Dr Janette McWilliam  
Project Title: Developing Digital Humanities student capabilities through the AusLit Resource  
Duration: 1 year  
Funding: $121,974  
Start Date: 1 October 2015  
End Date: 30 September 2016
Short Description: Integrating the AusLit Resource with Blackboard and adjusting the curriculum in humanities subjects.

Key Words: online exhibitions, digital humanities, ICT skills, flipped classrooms

Abstract: This project will enable embedding of the leading Australian Digital Humanities facility into the teaching and learning activities across the Faculty of Humanities and Social Sciences. The UQ maintained AusLit database is a vast cultural heritage resource with enormous potential to become a superlative platform for professionally based student learning. It will allow students to create and curate digital objects and exhibitions leveraging the potential of a highly regarded research facility into the teaching space and increase the flexibility of modes of study. The project builds on successful proof-of-concept applications in three courses during 2015 and 2015 that demonstrated AusLit's ability as a site to create and host research and learning outcomes by students in the School of Communication and Arts. This project will enhance UQ students' engagement with contemporary humanities research and scholarly communication practices, providing opportunities for showcasing their achievements in evidence based learning through writing for public consumption.

Award: 2015 Technology-Enhanced Learning Grant
Faculty: Humanities and Social Sciences
School: Music
Project Lead: Dr Eve Klein
Project Team: Associate Professor Julie Ballantyne, Dr Mary Broughton, Dr Robert Davidson, Patrick Murphy, Dr Simon Perry, Dr Liam Viney

Project Title: Technology-enabled creative music making: targeting future works skills 2020 in music technology curriculum design

Duration: 1 year
Funding: $100,000
Start Date: 1 October 2015
End Date: 30 September 2016

Short Description: Restructure music technology classes from a lecture based model focused on studio recording, to a flipped classroom model focused on interactive current music making practices.

Key Words: music technology, flipped classroom, mobile media

Abstract: This projects draws upon Future Work Skills 2020 (Davies et al. 2011) to rethink the integration of music technology with the School of Music, applying an Iterative and Cyclic Model of Music Creation Interrelationships to music technology curriculum design so that Music graduates can better target the Ten Skills for the Future Workforce (2011, 8-12). Music technology classes will be restructured from a lecture-based model focused on twentieth century recording studio practice, to a flipped classroom model focused on interactive creative music making in the twenty-first century. This enables students to develop skills applying mobile, online and desktop computing technologies to music making scenarios that incorporate both music composition and performance practices. By teaching musicians how to apply technology in a flexible and adaptive way, they will gain experience transforming their musical skills across a variety of contexts and mediums relevant to careers in the
music industry, media, community arts and education sectors. As part of this project, the pedagogical approach will be evaluated for its effectiveness and transferability to other practice-centred disciplines within the University and the broader tertiary sector. A key outcome of this project is program-level change within the School of Music, leading to the establishment of a Minor in Music Technology for the 2017 academic year.

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Science  
School: Mathematics and Physics  
Project Lead: Associate Professor Tim McIntyre  
Project Team: Associate Professor Tony Roberts, Dr Margaret Wegener, Dr Kelly Matthews  
Project Title: Dynamic, Interactive simulations for enhancing student learning  
Duration: 1 year  
Funding: $98,233  
Start Date: 1 October 2015  
End Date: 30 September 2016  
Short Description: To develop and test physics and mathematics simulations to help students prepare for interactive classes (across 5 courses), using Javascript and/or GeoGebra. The project includes development of associated teaching material.  
Key Words: simulations, active learning  
Abstract: This project aims to transform student learning experiences in undergraduate physics and mathematics courses using dynamic, open source online tools to enhance preparation for in-class active learning. Students struggle with mathematical thinking and physical modeling that requires them to relate dynamic, complex phenomena to equations they need to derive and solve. Emergent, open source technologies offer dynamic, visual simulations that students can manipulate and link to equations. When packaged within an appropriate learning framework, these technologies can transform students’ learning and academics’ approaches to designing and teaching their courses.

Award: 2015 Technology-Enhanced Learning Grant  
Faculty: Health and Behavioural Sciences  
Project Lead: Professor Sarah Roberts-Thomson  
Project Team: Elizabeth Wardrop, Jessica Tsai, Dr Samantha McKenzie  
Project Title: A flexible ePortfolio platform for work-integrated learning  
Duration: 1.5 years  
Funding: $199,069  
Start Date: 1 October 2015  
End Date: March 2017  
Short Description: To pilot the ePortfolio system identified in the first phase of this TEL project.  
Key Words: ePortfolio, assessment, reflection
Abstract: An ePortfolio is an electronic tool used to record, assess and archive the artifacts of learning and reflection for individual students. As such, an ePortfolio has the potential to show professional and personal growth, exemplify evidence-based practice and provide a planning space for future professional development needs and experiences (Hallam et al 2008). This project will pilot the recommended off-the-shelf solution from the Skills-Enabled ePortfolio innovation project, funded in the first round of the TEL Grants (2014). Two programs from two faculties and the UQ Advantage Office will participate in a live pilot in semester 1 and 2 of 2016, and the remaining programs from the 12 schools will be engaged simultaneously in an exercise to align their school needs with the recommended solution.

Award: 2015 Technology-Enhanced Learning Grant
Faculty: Science
School: Biological Sciences
Project Lead: Dr Patrick Ward
Project Team: Dr Daniel Ortiz-Barrientos, Dr Kelly Matthews, Marnie Holt
Project Title: Interactive practical manual for the analysis of biological data
Duration: 1 year
Funding: $50,000
Start Date: 1 October 2015
End Date: 30 September 2016
Short Description: This project will develop an interactive laboratory manual to train undergraduate and postgraduate students in biostatistics. The manual will be core material for BIOL2006 and CONS7008 and will support multiple third year courses in the Faculty of Science.

Key Words: biostatistics, interactivity, portable resource

Abstract: The project proposes to develop an interactive laboratory manual to train undergraduate and postgraduate students in biostatistics. The manual will be the core material for BIOL2006 and CONS7008 and will support multiple third year courses in the Faculty of Science. The manual consists of pages with interactive material that activates via mouse clicks. In each page, concepts and activities are layered according to the importance and difficulty, by use of pull-down menus, animations, video, audio, and slide shows. The manual is also computationally interactive where embedded computer scripts activate simulations of data, statistical analyses, and plotting of article-level illustrations. The manual is also inclusive as it facilitates learning for visual, non-visual learners as well as those for whom English is not the first language. It will help make statistics an engaging subject for biology students, will serve as a prototype for other interactive manuals UQ-wide, and help illuminate how biology students assimilate mathematical concepts.