



## THE ELECTRO EXPO

Showcasing innovative teaching & learning technologies & tools

1.00pm - 4.00pm, Thursday 22 June 2017

### PROGRAM

1:00pm - 1.05pm Dr Deanne Gannaway  
Welcome

#### PechaKucha presentations

1.05pm - 1.12pm **Mr Michael Jennings, Mathematics and Physics**  
Unidoodle - a classroom response app

1.13pm - 1.20pm **Dr Effie Kartsonaki, Chemistry and Molecular Biosciences**  
Online, virtual, and adaptive learning environments for first year chemistry courses

1.21pm - 1.28pm **Mr Gabriel Foley, Chemistry and Molecular Biosciences**  
Coder Quiz - online quiz site designed to assess Python coding skills

1.29pm - 1.36pm **Mr Christopher Frost, Humanities and Social Sciences**  
The Bachelor of Arts Interactive Planner w/ Shirley Moran and Sherrie Hoang

1.37pm - 1.44pm **Dr Victoria Bladen, Communication and Arts**  
Padlet - a classroom collaboration tool

1.45pm - 1.52pm **Ms Charlotte Pezaro, Education**  
Supporting student learning with SPOCs (Small Private Online Course)

1.53pm - 2.00pm **Mr Sam Harris, ePortfolio Project team**  
The UQ ePortfolio

2.00pm - 2.15pm **Look Mum, no hands! Mind Controlled Helicopter** - Ms Ashley York, Psychology

2.15pm - 2.30pm **IoT E-Learning Dashboard, Augmented Reality Experience, and Agricultural Drones**  
- Mr Fabian Vasuian and Mr Armando Navas Borrero, Science

2.30pm - 4.00pm **Enjoy afternoon tea as you visit each web kiosk presenter**

**Presenters as listed above will be available to answer questions alongside -**

#### Web kiosk presentations

- (1) **Dr Catriona Mills, Communication and Arts**  
Cirrus: High-level thinking - an engaging teaching & learning platform
- (2) **Assoc. Professor Blake McKimmie, Psychology**  
Using online lectures to enhance on-campus classes
- (3) **Mr Dave Kinlead, Historical and Philosophical Inquiry**  
Exploring an open-source, web-based argument mapping tool
- (4) **Mr Dom McGrath & Vilma Simbag, ITaLI**  
eExam - Transforming exams through electronic exam systems
- (5) **Dr Tammy Smith, Medicine**  
ExamSoft - An e-Examination platform in practice
- (6) **Ms Ailsa Dickie, UQ eLearning team**  
UQ Active Learning tools + Mirroring 360
- (7) **Mrs Kate Jurd, Medicine**  
Designing Authentic virtual case scenarios
- (8) **Dr Michael Bulmer, Mathematics & Physics & Nerina Scarinci, Health & Rehabilitation Sciences**  
Using 'The Islands', open-ended virtual environment, for student research projects
- (9) **Dr Marissa Edwards, Business**  
Promoting active learning in large classes utilising Kahoot! and Socrative
- (10) **Dr Emma Finch, Health and Rehabilitation Sciences**  
Training students in effective communication strategies via telehealth
- (11) **Assoc. Prof. Tim McIntyre and Dr Margaret Wegener, Mathematics and Physics**  
Interactive online simulations for enhancing student engagement with core material
- (12) **Dr Mohit Shahi & Dr Archana Sudarsan, Biomedical Sciences**  
Utilising Smart Sparrow for interactive online lessons
- (13) **Ms Esther Fink, EAiT**  
eLIPSE Ecosystem of Innovative Learning Technology



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### PROGRAM (DETAILED)

#### PechaKucha presentations

1.05pm - 1.12pm **Mr Michael Jennings, Mathematics and Physics**  
Unidoodle - a classroom response app

Unidoodle is a classroom response app which allows students to quickly submit sketch-style answers via their iOS or Android device to questions asked by their teacher in class. Features include freehand drawing and multiple choice questions. Unidoodle was used in two large first-year mathematics courses in Semester 1. Data from student surveys will be discussed in this presentation. Come along to see Unidoodle in action!

**Learning:** Understand how to use Unidoodle in your classes to obtain rich, real-time knowledge on student understanding. Your students benefit by you having a deeper understanding of them.

1.13pm - 1.20pm **Dr Effie Kartsonaki, Chemistry and Molecular Biosciences**  
Online, virtual, and adaptive learning environments: improving the journey through large first year chemistry courses

In 2014 we undertook a successful restructure of our first year chemistry curriculum with the aim to improve individual learning progressions. With an awareness of transitional issues, we identified a critical need to introduce more flexible learning options by offering online delivery of key components of our courses. To this end, we have developed a new blended alternative to one of our core first year courses, which is being offered in the summer semester. The instructional design was informed by both chemical education research and technology enhanced learning research. In this presentation we will describe the intention of each element of the course, how these were embedded and how they were evaluated for effectiveness. The outcome was a successful hybrid course with associated recommendations for practice.

**Learning:** Understand the application of a variety of online tools and their effectiveness for student learning.

1.21pm - 1.28pm **Mr Gabriel Foley, Chemistry and Molecular Biosciences**  
Coder Quiz - online quiz site designed to assess Python coding skills

Coder Quiz is an online quiz site designed to assess Python coding skills that takes student's responses and uses them as inputs to run Python code and check correctness. This allows students to quickly check their answers during a timed in-class assessment item, allows answers to be dynamic and easily verifiable, and allows for tutors to focus on assessing understanding of concepts rather than simply verifying the output of code. Coder Quiz was designed to help identity-verifiable assessments run smoothly and quickly. Students benefit from being able to confirm when they have the correct answer and can move on. Tutors benefit from a reduced marking time and from being able to access responses and conduct interviews at separate computers away from others still undertaking the assessment. And both groups benefit from actually running code as this means a wider range of answers are acceptable and makes plagiarism easier to detect.

**Learning:** Understand how this innovative assessment tool is enhancing student learning outcomes.



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#### PechaKucha presentations

1.29pm - 1.36pm **Mr Christopher Frost, Humanities and Social Sciences**  
The Bachelor of Arts Interactive Planner  
Co-presenters Shirley Moran and Sherrie Hoang

In January 2016, the HASS faculty developed and released an [interactive planner for the Bachelor of Arts](#). It continues to help thousands of students navigate complex rules, jargon, and more than 77 000 combinations of majors, minors, and extended majors in the program. The planner draws on up-to-date institutional data to highlight semester offerings, unit prerequisites, provide warnings where rules aren't met, and links students to student advisors for guidance when needed. Tablet and mobile friendly, the planner increases the capacity for student choice and design, while streamlining student advising processes. The tool's success in terms of student satisfaction and advisor reach has led to a UQ wide funded project to pilot the planner system in other programs.

**Learning:** Understand how this tool has been developed and how it may be integrated into your program.

1.37pm - 1.44pm **Dr Victoria Bladen, Communication and Arts**  
Padlet - a classroom collaboration tool

One of the easiest ways to collaborate and create, [Padlet](#) is an online tool used by UQ teachers as an electronic whiteboard. It can be easily set up and linked to Blackboard sites, used in lectures or tutorials for group work, questions, analysis of texts etc.

**Learning:** Learn how to use this simple but effective e-tool to enhance your teaching.

1.45pm - 1.52pm **Ms Charlotte Pezaro, Education**  
Supporting student learning with SPOCs (Small Private Online Course)

Scaffolding student reading and gathering feedback on learning Introduction to the Role of Science and Technology Education in Society is a first year course for Bachelor of Education (Primary) students. In this course, students are taught about science, the nature of science, and science education. Students have a great deal of content to revise from their compulsory education, which is then applied in class. To support them in their learning outside of class time, a SPOC - small, private, online course - was created. The SPOC facilitates their exploration of the ideas, while also collecting data regarding their progress and understanding, which is then used to adjust and plan for class activities.

**Learning:** Understand how a SPOC could contribute to your teaching and enhance your student learning outcomes.

1.53pm - 2.00pm **Mr Sam Harris, ePortfolio Project team**  
The UQ ePortfolio

The UQ ePortfolio sits inside Blackboard and captures students' work across their program of study. Assessment within the ePortfolio allows the tracking of longitudinal data of student performance and progression. This can be mapped to graduate attributes, professional competencies, program-level outcomes, etc. Students also have the ability to use tools within the ePortfolio to publish an ePortfolio website for professional accreditation and employability. The primary users of the tool are academic staff and students. Academic staff will have access to an additional suite of focused assessment tools and reporting functionality. Students can use the tool for employability and accreditation post-university.

**Learning:** Understand how to implement and use ePortfolio to your advantage.



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#### Short presentations

2.00pm - 2.15pm

**Look Mum, no hands! Mind Controlled Helicopter - Ms Ashley York, Psychology**

No longer just science fiction, using brain-computer interfacing with a stylish headband that detects and filters brain-evoked electrical activity, we can now fly a small helicopter using just our thoughts. Control varying components of the helicopter by regulating how focused or relaxed your mind is!

2.15pm - 2.30pm

**IoT E-Learning Dashboard and Augmented Reality Experience - Mr Fabian Vasuian, Science**

The UQ Remote Sensing Lab has developed an Internet of Things (IoT) Sensor Network which has been deployed to the Darbalara Farm and around the UQ Gatton Campus. This network feeds data in to an E-Learning Dashboard- developed as part of the TEL Funded project 'The Internet of Things for smart science and agriculture education' - which enables students to make use of it as part of their courses. The Dashboard is currently being developed further to incorporate a number of problem based learning modules. In addition to the dashboard, an augmented reality experience is currently being developed as part of a partnership with Microsoft and Telstra/Readify, which will make use of the data as part of a waste water management learning module.

**Using drones to acquaint students with remote sensing technologies in agriculture - Mr Armando Navas Borrero, Science**

The UQ Agricultural Remote Sensing Lab has developed drone and imaging sensor technologies to assist in teaching the Precision Agriculture course (AGRC3036). These technologies were developed in house by UQ students for UQ students. These hands-on teaching tool helps cement various heterogeneous concepts associated with precision agriculture (PA) subjects, such as spatial variability, global position systems (GPS) and acquaints the student with data collection methodologies by showing them how to plan and fly their own drone missions, to gather their own data in order to perform their course assignments using industry grade geographical information systems and image analysis software (ArcGIS & ENVI).

**Learning:** Understand how drone technology is contributing to integrated and enhanced learning.

#### Web kiosk presentations

**Dr Catriona Mills, Communication and Arts**

**Cirrus:** High-level thinking - an engaging teaching & learning platform

**Cirrus** is an engaging teaching and learning platform, built at UQ on the AustLit custom content-management system, that allows students to engage in text, image, and video annotation tasks and create long-form multimedia assignments. Cirrus enables direct and focused interrogation of objects under study, including not only written texts but also artefacts, audio-visual material, and artworks, in an easy-to-use interface that is also compatible with Turnitin.

**Learning:** This demonstration will outline the ways in which Cirrus offers academic staff and students the opportunity to engage in new and interactive ways with texts and assessment tasks.

**Assoc. Professor Blake McKimmie, Psychology**

Using online lectures to enhance on-campus classes

We have developed a series of [online lectures](#) and [activities](#) that are used in conjunction with on-campus workshops to enhance student engagement and learning.

**Learning:** Gain an insight into the possibilities for your classroom. Learn how to re-imagine a traditional lecture-based course to free up class time for enhanced learning.



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#### Web kiosk presentations

##### **Mr Dave Kinkead, Historical and Philosophical Inquiry**

Exploring an open-source, web-based argument mapping tool

Argument mapping is one of the most effective ways to improve reasoning skills. The visual representation of an argument's structure aids comprehension and is the sweet spot between natural language and formal logic. Six months of argument mapping practice shows similar gains in informal reasoning as an entire undergraduate degree. Yet integrating argument mapping into existing materials is difficult - argument mapping software is either proprietary and non-extensible or designed for desktop installation. This open-source, web-based argument mapping tool can be integrated into any web site or LMS. Students can highlight text from assigned documents and generate an argument map based on their selection. These maps can then be shared and discussed, allowing argument mapping to become integrated into any course.

**Learning:** Understand how you could use this argument mapping tool to enhance your students' critical analysis skills.

##### **Mr Dom McGrath & Vilma Simbag, ITaLI**

eExam - Transforming exams through electronic exam systems

UQ has partnered with a group of national universities\* to enable authentic assessment through the development and use of an electronic exam system. The eExam system uses bootable USBs, plugged into student's own laptops, to create a secure environment where a range of real-world tools can be used to demonstrate learning. The current platform supports word processing, spreadsheets, and multimedia, and the range is continually expanding. Completed exams are downloaded via a USB hub and can be marked electronically.

**Learning:** Take a look into the world of e-Exams and understand how this new system could impact your course or program.

\* This work is part of a project funded by an Australian Government Office for Learning and Teaching, Innovation and Development Grant 2016-2018 with partners across Australia: Monash University (lead university), University of Tasmania, University of Queensland, Central Queensland University, Australian National University, Edith Cowan University, RMIT University, Macquarie University, University of South Australia, University of New South Wales. It has been approved by the UQ Assessment Subcommittee.

##### **Dr Tammy Smith, Medicine**

ExamSoft - An e-Examination platform in practice

Staff within the Faculty of Medicine have been trialling the ExamSoft platform for the creation and delivery of examinations and for providing post-exam feedback to students. After an opt-in trial in 2016, a more extensive pilot is taking place in 2017, including an image exam run on UQ computer labs during the end-of-semester 1 exams. This tool has many advantages to academic staff, professional staff and students, in terms of quality control during the exam writing phase, ease of exam production (with delivery of the exam in either hard copy or electronically) and arguable most important of all, provision of high quality feedback to students.

**Learning:** See a working example and hear about the results of the trial of this e-Examination platform.



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**Ms Ailsa Dickie, UQ eLearning team**  
UQ Active Learning tools + Mirroring 360

UQ Active Learn is a suite comprising of three applications: UQpoll, UQwordcloud, UQwordstream. These applications are used to collect student responses to a question or a series of questions posed during a lecture/tutorial. Students can respond using a web enabled device. Mirroring360 allows student to mirror the display of their smart device screen to a computer. The tool can be used by students in lectures/tutorials to compose their responses to questions in any software and share them with the rest of the class. These tools allow teachers to ask questions, gain immediate feedback from students and adjust their lectures/tutorials accordingly. Questions can be posed to check students' understanding of lecture content, identify student misconceptions and facilitate discussions.

**Learning:** Learn how to use these centrally supported tools to engage students and promote deeper understanding in lectures and tutorials.

**Mrs Kate Jurd, Medicine**  
Designing Authentic virtual case scenarios

Well designed interactive case scenarios can effectively promote deep learning, clinical reasoning and can orient students to real life patient encounters. This is ideal for novice learners who can work through a virtual case which facilitates transfer of conceptual knowledge to the clinical setting. The online cases are designed as worked examples that emulate real patient encounters during a night shift. The scenario is embedded with a mixture of decision making questions, providing feedback in terms of discriminating features and examination of the differential diagnoses which is particularly helpful in fostering clinical reasoning. The virtual scenarios prepare students for the common patient conditions that they might encounter on a typical night shift. The scenarios can be accessed via Blackboard or iPad. Mobile access provides the advantage of downloading the scenarios for offline access.

**Learning:** Understand how this interactive case study has impacted upon student learning, and acquire some insights to developing an authentic virtual case scenario relevant to your course or program.

**Dr Michael Bulmer, Mathematics & Physics &  
Nerina Scarinci, Health & Rehabilitation Sciences**  
Using 'The Islands', open-ended virtual environment, for student research projects

The Islands provide an open-ended virtual environment that has been used to facilitate student research projects in a statistics curriculum. A new version of this world was launched in 2015, featuring a major overhaul of both the interface and the underlying simulation, and in the last two years we have collaborated on an innovative research methodology course for Therapies students in which an Islands project forms a core part of the assessment.

**Learning:** See this tool in action and have an opportunity to engage with it. This tool is of benefit to academic staff who need to support their students in learning about study design and data collection, particularly with human subjects.

**Learning:** Hear about the results of this research and watch a demonstration to experience these tools in real-time. Gain an understanding of the advantages and disadvantages of using these tools in particular contexts e.g., to increase engagement during formal lectures, as part of presentations to encourage student participation, or as a revision tool at the end of the semester.



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**Dr Marissa Edwards, Business**

Promoting active learning in large classes utilising Kahoot! and Socrative

Active learning approaches that utilise Audience Response Technology (ART) are prevalent in higher education settings today. Although “clickers” have been used most extensively in the past, mobile-phone based technologies are becoming more prevalent. Indeed, research suggests that current students are not only highly experienced users of mobile communication technology, they also expect that educators will use these technologies to supplement their learning. Two online platforms in particular, [Kahoot!](#) and [Socrative](#), have received attention in the higher education literature, although rigorous assessments of their utility are rare. As part of my Graduate Certificate in Higher Education at UQ, I recently conducted a comparative, mixed-method study of Kahoot! and Socrative in my large undergraduate management class to explore the effects of these technologies on students’ learning and engagement.

**Dr Emma Finch, Health and Rehabilitation Sciences**

Training students in effective communication strategies via telehealth

There has been an increasing move by healthcare providers towards telehealth services (i.e. 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. Our project developed and evaluated a telehealth program to train speech pathology students in strategies for communicating effectively with patients with aphasia at a local hospital without the students leaving the UQ campus. We also evaluated the clinical useability of telehealth in student clinical learning.

**Learning:** Staff involved in teaching students communication skills in any discipline will learn that students can build effective communication skills while interacting with clients over the internet without leaving the university campus.

**Assoc. Prof. Tim McIntyre and Dr Margaret Wegener, Mathematics and Physics**

Interactive online simulations for enhancing student engagement with core material

We have developed on-line interactive simulations and associated teaching packages to aid student learning. These simulations are built using Javascript or Geogebra programming languages and made available to students via any internet enabled device. The simulations allow student to picture a mathematical or physical model and investigate how the various controlling parameters influence the predictions of the model. The associated teaching packages aid students in becoming familiar with the simulations and provide initial guidance on how to use and understand them. We then build assessment activities around the simulations which ask the students to delve further into the concepts involved. For example, students may undertake a ‘virtual’ experiment, varying certain parameters and measuring the outcomes.

**Learning:** This type of approach can be used in any classes where a physical model is used to describe a system. Move away from traditional text book approaches to use dynamic displays which students can control and manipulate. More [here](#).



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#### Web kiosk presentations

**Dr Mohit Shahi & Dr Archana Sudarsan, Biomedical Sciences**

Utilising Smart Sparrow for interactive online lessons

Medical education is evolving every day and there is a constant need to refine the learning tools to fit specific student needs. The quality of the teaching material and the methodologies are improved, but changes are too small to be noticed. The role of students, in the evaluation of courses and learning material, has always been compelling and convincing. However, their role is often to evaluate and score the strengths, weaknesses, opportunities identified by the lecturers. A more direct involvement of the students brings a potential to design lessons particularly desired and enjoyed by the students. With this in mind, we provided some senior medical students with the opportunity to design and develop pathology 'pot of the week' online lessons in collaboration with a pathology academic. These interactive lessons were developed using the Smart Sparrow platform and helped students learn through their active participation by solving clinical questions related to the pathological abnormalities in a displayed specimen pot. Feedback was built into the interactive session and so students learnt about complex pathological processes underlying a specific disease process in a time efficient manner.

**Learning:** Understand how you could use SmartSparrow to add interactivity to your course.

**Ms Esther Fink, EAIT**

eLIPSE Ecosystem of Innovative Learning Technology

eLIPSE brings together expertise in the fields of eLearning, curriculum design and software development that allows innovations to be quickly and effectively piloted, and evidence-based research to be developed and disseminated.

The Centre has a growing portfolio of highly innovative eLearning tools that have emerged over the past 6 years of flipping the classroom in Science and Engineering. These tools capitalise on the capture of student's digital traces which can be deployed to enhance student learning, particularly in very large classes that employ technology-enhanced active learning.

**Learning:** Listen in for an interactive overview of the Centre's Innovative Learning Technology projects.