**ITaLI: Winter Research Project Description**

<table>
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<tr>
<th>Project title:</th>
<th>Technology in teaching at UQ: Exploring the use dynamic, interactive simulations for enhancing student learning in maths and physics</th>
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<td>Project duration:</td>
<td>6 weeks from mid-June</td>
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**Description:**

*Background:* In 2016, dynamic, interactive simulations to engage undergraduate students were piloted in several mathematics and physics courses. Students struggle with mathematical thinking and physical modelling 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.

*Project:* Linked to a UQ funded *Technology-Enhanced Learning* (TEL) grant project led by Tim McIntyre with Kelly Matthews, Margaret Wegener, and Tony Roberts.

*Activity for selected Winter Scholar:* Reviewing data from the courses and conducting interviews with staff to propose recommendations to the project team on how to enhance the learning experience of students using interactive simulations.

**Expected outcomes and deliverables:**

The selected scholar will gain **numerous benefits:**

1. expand professional network
2. enhance research acumen in a social sciences study
3. build capacity in teamwork and communications skills (presentation, writing)
4. contribute to high profile UQ project.

*Outcomes* could include

1. presenting findings to UQ community
2. co-authoring a conference talk and potentially manuscript

The selected student will work actively with the researchers and have a desk in the newly built Learning Innovation Building.

**Suitable for:**

This project is open to students with a background in mathematics, physics, education, psychology, science, arts, journalism, marketing, business, social sciences or any discipline that emphasises critical thinking and communication skills.

**Supervisor:**

Kelly Matthews on k.matthews1@uq.edu.au

**Further info:**

Applicants please contact the supervisor prior to submitting an application to discuss the project requirements. When making enquires please specify the project in which you have interest. Please provide your CV.