



Quantitative Skills in Science: *Curriculum models for the future*

Australian Learning and Teaching Council (ALTC) Priority Project - Curriculum Renewal - 2010



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QS in Science – currently



- Widespread agreement of need for QS in science graduates
- Preparation of scientists, doctors, etc
- Negative views towards quantitative subjects amongst secondary & tertiary students

QS in Science – currently



- Universities face decline in science enrolments
- Pressure to retain students while delivering QS
- Need for a strong interdisciplinary approach to effectively deliver QS

How does this project fit?



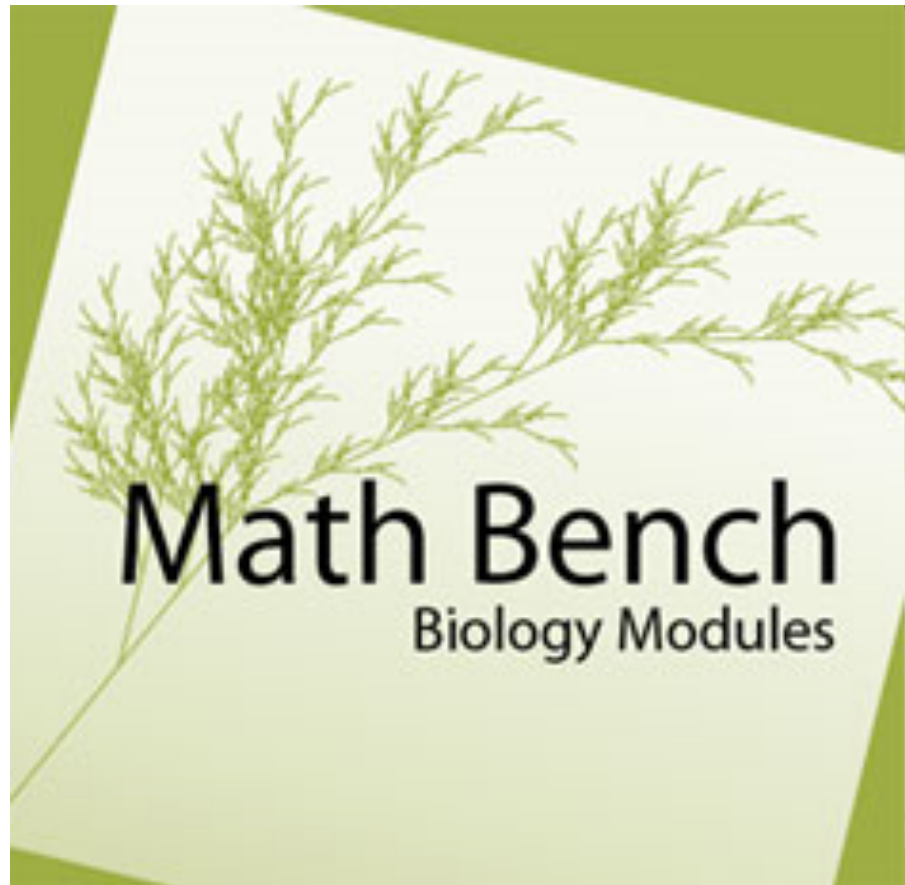
- Project team members bring local and international perspectives to this global issue
- Look for big picture solution
 - Program level: how to conduct curriculum reform
 - People level: how to get science and maths academics to work together in T&L
- Cross-disciplinary approach to cross-disciplinary problem

Outcomes



1. Curricula structures – benchmarking
2. Models for curricula change in science higher education degree programs
3. Framework for academic change (cross-disciplinary collaboration)
4. Dissemination activities

Example – MathBench, UMD



Main goal of MathBench is to **integrate quantitative approaches** and embed mathematics more **deeply into the undergraduate curriculum**

Example – UBC Integrated Science



Integrated Sciences
Making Connections in Science



Students in Integrated Sciences design their own upper-division curriculum, which must bridge at least two disciplines within science or beyond. **These custom curricula must include Integrated Sciences "core" courses (ISCI courses) that are explicitly interdisciplinary.**

Activities



Curriculum structure

1. Undertake site visits
March – May 2011
2. Evaluate QS in Science curricular structures
June – July 2011
3. Analyse factors impacting / inhibiting curricula change
July – August 2011
4. Develop models / recommendations for curricula change
September 2011

Academic change

1. QS resource inventory
June 2011
2. Document resource implementation at partner institutions
September 2011 – June 2012
3. Analyse data and develop framework for resource adaptation, and interdisciplinary partnerships
July 2012