School of Mathematics and Applied Statistics
2013 Colloquium Series
University of Wollongong

Title: Let's solve issues in energy, water and the environment with a little bit of Math

Speaker: Aaron Thornton (CSIRO)

Time and Date: Tuesday 24 September 2013, 3:30pm

Location: 24-102

Abstract: According to an ABC study, Australia's top three environmental problems are in water, climate change and energy. Can we fix them? Here we present the latest advances in carbon capture technology, water filtration, coal seam gas extraction, energy-waste management and fuel cell systems. These advances rely on underlying models that describe and predict phenomenon from the atomic-scale to the planet-scale. Mathematics is a powerful tool for linking information across disciplines such as chemistry, engineering and economics. Research data are making their way onto the internet where informatics tools are needed to collate, interpret and utilize the information overload. Projects including the Materials Genome are utilizing research data to advance the discovery and development of materials to address world issues. There are still large gaps in solving our environmental problems and a critical part of the solution is how we set up the infrastructure of information such that all disciplinary efforts are aimed towards the same goal.