

# Life, Earth & Environment Seminar Series

When: Thursday March 2<sup>nd</sup>, 12-1 pm

Where: Natural Resources Building, Small Lecture Theatre (EM2)

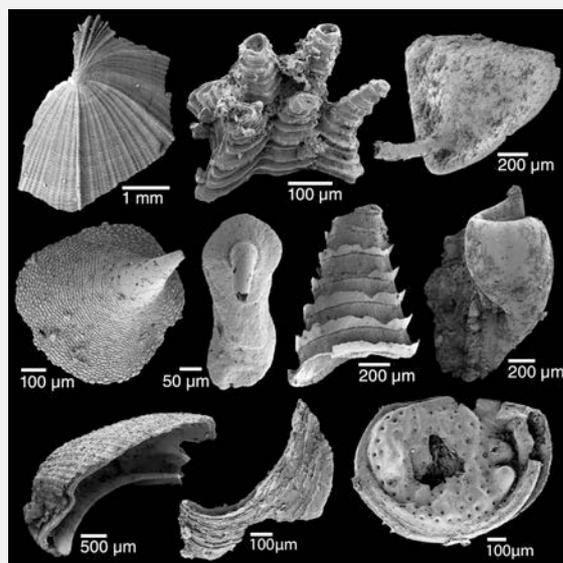
## SIEVING THE SMALL STUFF; BIG STORIES FROM TINY FOSSILS

Dr Marissa Betts

*University of New England, Palaeoscience Research Centre*

Early Cambrian microfossils can help us answer some big questions: How old are different packages of rocks? Where do we draw boundaries in the geological timescale? What are the evolutionary relationships between major groups of animals? Where were the continents millions of years ago? Accurately determining the age of fossils and rocks is a fundamental task in palaeontology. The Cambrian Explosion was perhaps the most significant animal radiation in Earth history, however resolving *when* anatomical innovations occurred and *how long* ecological changes persisted for is an ongoing challenge.

Shelly microfossil occurrences, in combination with geochemical and radiometric dating techniques have helped refine the timescale, and provided a reliable means to globally correlate early Cambrian rocks from of South Australia. This dating scheme has provided critical temporal context for fossil discoveries. New techniques are being applied to extract a unique suite of microfossils from Cambrian-age rocks. Placing these extremely delicate microfossils on a timeline is essential for filling in some of the gaps in the fossil record and answering big questions about animal evolution in its earliest phases.



### Biography

Dr. Marissa Betts completed her PhD in 2016 at Macquarie University, studying early Cambrian shelly fossils from South Australia and their application to dating and correlating rocks. Broadly, her research is motivated by a curiosity about what the earth was like a long time ago and the ways we can discover evidence about how it has changed. She has just begun an ambitious new project at UNE requiring patience, a steady hand and some really strong acid. Please send positive thoughts.