Ocean acidification impacts on the functional morphology of benthic foraminifera

Nikki Khanna, Jasmin Godbold, William Austin & David Paterson
Preliminary study to assess OA impacts on functional morphology:

- Test ornamentation of functional importance in breaking up aggregates of food and detritus

- Comparison of ornamentation in *Haynesina germanica* (dominant estuarine species) cultured under varying CO₂ concentrations

- 36 week exposure at either 380, 750 or 1000 ppm

Comparison of apertural regions & test surface between CO$_2$ treatments:

- 380 ppm
- 750 ppm
- 10000 ppm
CO$_2$-induced seawater acidification reveals:

- Sensitivity of functionally important ornamentation to changing seawater CO$_2$ levels.
- Shell dissolution evident at high CO$_2$ levels
- Significant reduction and deformation of ornamentation at high CO$_2$ levels

Possibly lead to a reduction in feeding efficiency with consequent impacts on organisms survival? (Initial feeding study indicates differences in feeding and survival between different CO$_2$ treatments. Currently undergoing analysis)