

## News

# AMSI Summer Scholarship Successes

31 OCTOBER | 2014

Two medical mathematics students, Nicole Cocks and Lauren Borg, were awarded the AMSI summer scholarship. Their projects are motivated by solving problems related to key GRDC/ARC funded projects and will be jointly supervised by Prof. Brian Cullis (Director, CBB) and Emi Tanaka (Research Fellow, CBB).

### Nicole's Project

Late maturity alpha-amylase (LMA) is a grain defect trait that renders wheat unsuitable for high value end products, even though the grain may appear sound. The frequency of lines in wheat breeding programs which LMA appears is reasonably high, and hence LMA has become an important trait that is now routinely assessed in all wheat breeding programs in Australia and is a requirement of the wheat classification process. Nicole will examine the current protocol used to assess LMA and compare with alternate schemes.

### Lauren's Project

Traditional plant breeding approaches have been largely based on the well established theory associated with quantitative genetics. These approaches produce predictions of additive genetic value of an individual based on ancestral information. The rapid advancement of molecular technology offered a range of opportunities to use high density molecular marker data for plant breeding purposes. Perhaps the most important advance is in the area of genomic selection. Another area of particular interest is to use marker/trait associations to better understand the genetic architecture of complex quantitative traits. This is an area of active research within CBB and Lauren will examine and conduct comprehensive comparisons for some key methods in quantitative trait loci analysis.

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