**Rowe Scientific Investigations Physics 11-12**

**1st: Macinley Butson, The Illawarra Grammar School, *The SMART System***

Macinley continued to develop and test the clinical viability of her invention of a system to reduce the radiation dose during radiotherapy for treatment of breast cancer. The system combines a physical shield made from overlapping copper pieces to block radiation to non-treated areas and a strong magnetic field to deflect harmful electrons out of the radiation beam, while not interfering with the treatment. This system will help to minimise the negative short and long-term side effects of radiotherapy, and potentially improving cancer survival.