

## Dr Simon Baxter

**Fellowship location: School of Molecular and Biomedical Science**

**Previous position: Postdoctoral Scientist; University of Cambridge, UK.**

**Research focus:** Simon's research uses molecular genetics to understand how butterfly mimicry evolves, and how insecticide resistance arises in agricultural pests. His work investigates the gene mutations that cause resistance to insecticides. Pests that evolve resistance to insecticides can inflict extensive crop damage, reduce farming yields and result in environmental pollution from ineffective insecticide applications. The project aims to use genome sequencing to identify the specific DNA mutations that cause Bt toxin resistance in the diamondback moth (*Plutella xylostella*), and to assess how common these resistance mutations are in Australia and around the world.



**About Simon:** "My parents moved from Adelaide to Melbourne shortly after they married. I was born and raised in Melbourne, however we spent most school holidays driving back to Adelaide to visit with relatives. I studied science at Monash University (1995-1998) where I majored in genetics and developed an interest in insect evolution. After graduation, I held a very rewarding position as a research assistant at the Peter MacCallum Cancer Centre in Melbourne, investigating genetic mutations associated with different types of cancer. In the end, I decided to follow my interest in insects, and began a PhD at the University of Melbourne (Dept. Genetics, 2001-2005), focusing on molecular mechanisms of insecticide resistance in agricultural pests.

"Since 2005, I've been a Postdoc in the UK studying insect evolution and adaptation. My research uses molecular genetics and genome sequencing to understand how mimicry evolves in *Heliconius* butterflies, and how insecticide resistance arises in agricultural moth pests.

"After many years abroad, and now with a young family, I felt it was time to move home to Australia. Applying for a Ramsay Fellowship at the University of Adelaide was an excellent opportunity to integrate back into Australia academia and research. Adelaide has strong genetic and agricultural research facilities, so offers the perfect environment to develop my research program further. I will be joining the School of Molecular & Biomedical Science in July 2012 to continue investigating gene mutations that cause resistance to insecticides. Pests that evolve resistance to insecticides can inflict serious crop damage, reduce farming yields and can result in environmental pollution from ineffective insecticide applications. I've been awarded research funding from the Australian Research Council (Discovery Proposal) to support this research.



"One of the greatest benefits of a Ramsay Fellowship is research flexibility. Through the course of my appointment, I'm aiming to establish new collaborations with other scientists in Adelaide, and expand my research on how insects evolve and adapt to changing environments."