



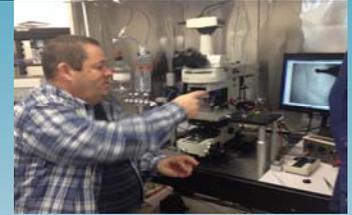
# Andrew Delaney



**Neurophysiologist**  
**Charles Sturt University, Orange**

**Article by Ellie Giger**

Andrew Delaney (Left) pointing out a device used for testing rats with memory/anxiety.



Dr Andrew Delaney in front of the electron microscope, showing parts of the rats brain.

Dr. Andrew Delaney is a Senior Lecturer in Anatomy and Physiology (classified as a Neurophysiologist). He does research on the brain in anxiety and depression at Charles Sturt University in Orange, NSW. Dr. Delaney studies the brain by using lab bred rats and testing on them. He studies their brains (one third of a millimetre thick pieces) through a electron microscope as part of his day-to-day work. He uses his tests with the rats brain in anxiety and depression to help with the mental health of humans who have anxiety and depression.

Dr. Delaney did his undergraduate studies in organic/analytical chemistry and biochemistry at the University of Newcastle. He was also awarded honours for a research project in Medicine and Science. After his undergraduate studies, Andrew became interested in neurophysiology and completed a PhD at the ANU, studying the uses and effects of drugs (pharmacology) of receptors in the brain (the central amygdala region). Andrew loved science ever since he was young, so he worked hard to get to where he is now. To get to the level he is at Andrew spent 20 years in training (mostly at universities). In 2010, Dr. Delaney accepted a position at CSU to continue his research in his own lab.

When working Dr. Andrew Delaney uses an electron microscope looking at the receptors and neurons in the rats brain and how it impacts them. For example, he fed the rats chocolate and sugar and then tested the brain to see the effects. For another of the tests they put the rats in a box and if it remained at one side it was anxious and if it travelled around the box then it was not anxious. These results were analysed by computer so that the humans did not interfere with the rats. He runs the anxiety, depression and pain tests on the rats, then collects the data to find out how to deal with humans coping with anxiety and depression.

Andrew and his co-workers (main co-worker James Crane) have students in Canberra and other parts around the state, who they lecture and teach.

Andrew has received a total grant amount of \$1,036,566 from 2004–2012. Some of these grants are for looking at receptors in the amygdala and synaptic circuitry. He has received awards for Enhancing Research Capacity on the Northern Campuses, central nervous system plasticity during the development of anxiety and depression in response to chronic pain and he also received an award for monoaminergic modulation of calcium signaling to the central amygdala.

Mr. Delaney studies and work help the mental health area in society, because of his studies in anxiety and depression. He does his tests on rats, but he then relates it back to the human brain. Neurophysiology in itself is a branch of science that connects with physiology and neuroscience. It concerns the functioning of the nervous system and brain in general.

I believe Andrew's work is very beneficial to our society because according to recent studies, depression is the leading cause of disability worldwide, and in any one year, approximately 1 million Australian adults have depression and over 2 million have anxiety. For young Australian adults (aged 16 to 24), one in every sixteen is experiencing depression and one in every six is going through depression. What Andrew is doing is finding the cause and effect of these disabilities, to help these people from making their situation worse.