



Project Title: Spinal cord changes during chronic pain		Code: NCS1
Host School / Institute: Northern Clinical School		Address: Neurobiology of Pain Laboratory, Pain Management Research Institute , Kolling Institute Building (L.13), Royal North Shore Hospital, NSW
Certificates & Clearances required: Yes *Police clearance *animal handling <i>Information on how to obtain certificates, where necessary, will be given to successful applicants.</i>		
Primary Supervisor: Dr Karin Aubrey		
Phone: 02 9926 4961	Email: karin.aubrey@sydney.edu.au	
Co-Supervisor/team: The team consists of eight basic scientists who all work on different projects focused on understanding chronic pain. The Head of the Department is Prof Chris Vaughan . The summer scholar will be trained and working with Dr Karin Aubrey and Dr Yo Otsu.		
Project Type: Laboratory based; Data Analysis; Animal behavioral model		
Project Category: Neuroscience; Chronic Diseases/Illness		
Skills / Attributes of a successful student: The project would suit a student who is enthusiastic, meticulous, willing to ask questions, and who has a strong interest in neurobiology, drug development or pharmacology.		
Project Keywords: brain circuits; spinal cord dorsal horn; chronic inflammatory pain; animal models; excitatory neurotransmitter		
<p>Project Description: Pain plays an important role in helping us avoid injury and dangerous behaviours. Normally pain lasts for a short period, but for up to 20% of Australians pain continues after this period and becomes a distressing chronic disease.</p> <p>Chronic pain is a complex and diverse disease because it results when the brain changes the way it senses and interprets signals of pain and danger. These changes can occur in sensory, emotional and/or motivational brain regions.</p> <p>Currently, there are only a few treatment options for chronic pain and these treatments are only partially effective for 50% of patients. At the Neurobiology of Pain Laboratory, we are working to better understand the brain circuits involved in chronic pain in order to develop the new treatment strategies so urgently needed.</p> <p>The project offered is aimed at testing the hypothesis that an unusual form of excitatory glutamate receptors are expressed during chronic pain and contributes to pain behaviours. You will test this hypothesis in an animal model of chronic inflammatory pain and also use biochemical techniques to verify the cellular changes in spinal cord neurons. This project will advance our understanding of how glutamate receptors change in chronic pain, and potentially identify a novel drug target for future chronic pain treatments.</p>		