

## **Cerebro-cerebellar interactions in goal directed behaviour**

**Supervisory team:**

**Main supervisor:** Prof Richard Apps (University of Bristol)

**Second supervisor:** Prof Clea Warburton (University of Bristol)

Dr Nadia Cerminara (University of Bristol)

**Collaborators:** Dr Jordi Serrats (Takeda California)

**Host institution:** University of Bristol

**Project description:**

Human neuroimaging and clinical studies have implicated the cerebellum in cognition but almost nothing is known about the neural network basis of this function at the systems level of neuronal activity. The present proposal uses the combined power of in vivo electrophysiological recording and stimulation approaches and neuroanatomical mapping methods in experimental animals to investigate functional connectivity between the cerebellum and prefrontal cortex. Large scale brain network interactions during cognitive processes will be examined using state-of-the-art multichannel neuronal recording methods in chronically instrumented rats. Uniquely, this approach will be combined with investigating directly the effects of cerebellar transcranial direct current stimulation on cerebro-cerebellar neural network function and goal-directed behavioural performance.

The project is suitable for a student interested in receiving training in state-of-the-art in vivo research techniques, including advanced electrophysiological recording and associated analytical methods. There is a world-wide shortage of scientists with these specialist skills so expertise in this area will aid their future career.