

**PHD PROJECT AVAILABLE IN MELBOURNE, AUSTRALIA:
Sleep-dependent cognition in flatworms**

Sleep plays a role in maintaining waking performance. Sleep loss impairs attention, motivation, and memory processing. Such is true in humans and other vertebrates, but also in invertebrates, such as honey bees and fruit flies. Sleep has been observed in simpler animals still, including platyhelminth flatworms. Our group has characterized sleep in flatworms as a behavioural and biochemical state. We have neurotransmitters to deprive and augment sleep. Despite this proximate understanding of sleep in flatworms, it remains unclear why flatworms sleep at all.

The successful candidate will study sleep behaviour and/or electrophysiology using innovative technologies for a more thorough understanding of sleep functions in these simple invertebrates. Experiments could include:

- (1) associative & reversal learning in flatworms following sleep loss and augmentation,**
- (2) neurological changes following extended periods of wakefulness & with time asleep,**
- (3) dose-dependent responses to sleep deprivation, and**
- (4) imaging the sleeping flatworm nervous system (among others).**

SUPERVISOR: Associate Professor John Lesku (leskulab.org)

SPECIAL CONDITIONS: You should –

- be enthusiastic and highly motivated to undertake further study at an advanced level with a keen interest in the research themes of the Sleep Ecophysiology Group;
- be able to demonstrate strong academic performance in subjects relevant to anatomy, physiology, and have a strong desire to learn new and complex analytical techniques;
- have strong written and communication skills, with the ability to work independently and in a team-oriented context.

This 3.5-year PhD position is contingent upon the candidate securing a PhD scholarship.

Please direct all questions to:

A/Prof John Lesku

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