Neuroscience & Non-Communicable Diseases

Friday 12th October, 4pm

LG02, Wallace Wurth building

A/Prof Ehsan Arabzadeh

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Information processing in the rodent sensory cortex: population dynamics across behavioural states

Animals live in a complex and changing environment with various degrees of behavioural demands. In rodents, behavioural state can change from sleep and quiet wakefulness to active exploration of the environment, which is often manifested by whisking and locomotion. Efficient information processing is important in the active states such as during episodes of sensory decision-making. In this seminar, I present electrophysiological and two-photon calcium imaging (GCamp6f) data recorded from layer 2/3 of mouse primary vibrissal somatosensory cortex during a whisker vibration detection task and will characterise cellular and population dynamics during correct and incorrect detections, and under different behavioural states, from quiet wakefulness, to episodes of high sensory performance.

Bio

Ehsan Arabzadeh is a group leader at the Eccles Institute of Neuroscience, John Curtin School of Medical Research, at the Australian National University. He studied medicine in Tehran University (1994-2001), Tehran, Iran and received his PhD in Neuroscience from the International School for Advanced Studies, Trieste, Italy (2001-2005). Ehsan's research group, the Neural Coding Lab, studies sensory processing at the level of single cells and neuronal populations. The group combines electrophysiological, optical imaging, and behavioural methods, with computational analyses to investigate how the elegant circuitry of the rodent vibrissal cortex underpins the efficient encoding and decoding of sensory signals.

All welcome. Drinks and nibbles from 3:30pm, seminar starts at 4pm.

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