NEURO-connect

The Campus Biotech Seminar on Brain Sciences & Neuroengineering

01.10.2024 AT 12H15

Neil Burgess

Neural Mechanisms of Spatial Cognition

I will introduce the neural representations underlying spatial memory, including place, head-direction and boundary- and object-vector cells in the rodent hippocampus. I will then outline a computational model of how these cell types could work together to enable the spatial and episodic memory, e.g. reconstruction of the scene of an event. Predictions of this computational model will be compared with results from experiments on human memory and imagery, including implications for posttraumatic stress disorder.

I will discuss how environmental information needs to combine with information from self-motion for spatial localisation and planning, and how this might be achieved by the interaction of place cells and grid cells. I will consider how these representations can be examined in humans, and how knowledge of these spatial functions can be and generalised to other aspects of cognition and planning. Finally, I will discuss behavioural assessment of incipient Alzheimer's dementia with tests targeting the presumed entorhinal contribution to path integration.

Campus Biotech:
room H8-01-D

Zoom:
Meeting ID: 62694444617
Passcode: 617330

Early career researcher?
Sign up to lunch with the speaker (15 spots available)

Would like to discuss more?
Sign up to meet the speaker before/after the talk

Contact: kinga.igloi@unige.ch