

Virtual DANDRITE Lecture

Thursday 10 September 2020

12:00 – 13:00

Online via Zoom

Please find Zoom link via the Outlook calendar invitation. If you have not received this, please write an e-mail to Kathrine Hennings: kh@dandrite.au.dk



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Spatial learning and memory replays in the hippocampus

The hippocampus is one of brain regions involved in learning and memory and composed of neurons encoding a particular location of the environment, termed “place cells”, which are considered to create the cognitive map in the brain. To examine how spatial learning and memory are supported by hippocampal neuronal network activity. We use a large-scale electrophysiological recording technique in which tens of electrodes monitor neuronal activity signals in the hippocampus of freely moving rodents. In a recording environment, animals need to learn heterogeneously distributed values and develop goal-directed behavioral strategy to efficiently obtain reward at a discrete location and time. Recent studies show that hippocampal neurons, not simply encode animal’s particular locations, but replay the information of recently visited places and places to be visited in future, suggesting that the hippocampal neuronal network can actively consolidate previously learned memory and predict future upcoming events. The evidence proposes a neural mechanism underlying cognitive learning processes and purposeful behaviors to flexibly choose strategies that meet the instantaneous demands of the current situations.