



## Neuroscience data talk

# NDT, Marlene Bartos

**Marlene Bartos**

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Host: Ryuichi Shigemoto

Title: Dentate gyrus circuits for encoding, retrieval and discrimination of memories  
Abstract  
Encoding, storing and recalling distinct memories of often-similar content are essential brain functions that play a key role in guiding our daily behavior and decision-making. My groups' efforts are to understand how this challenge is resolved in the dentate gyrus (DG), a brain area involved in several mnemonic functions. As the initial stage of the trisynaptic hippocampal circuit, DG granule cells (GCs) encode space and context by location-dependent discharges, forming a cognitive map of an experienced environment. In this talk, I will address (1) how spatial maps emerge in the DG during learning by performing 2-Photon calcium imaging of neuronal activity in head-fixed mice navigating through virtual realities. (2) I will address how GABAergic inhibitory interneurons may contribute to the high stability of spatial maps and discrimination among different spatial maps. (3) Finally, I will highlight the relationship between the information about space and context carried by the activity of medial entorhinal cortex (MEC) inputs are translated in a code carried by active DG GC populations. Thus, we aim to shed light on how information is routed from MEC inputs through the DG to downstream hippocampal subfields to support cognitive demands.

**Tuesday, March 7, 2023 04:00pm - 05:00pm**

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