



SFB 1315

Mechanisms and Disturbances in Memory Consolidation:
From synapses to systems

Tuesday

APR 18, 2023
4:00 pm CET

BCCN Lecture Hall

Philippstr. 13, Berlin

ZOOM ID: 7754910236

SFB1315.ifb@hu-berlin.de

SFB 1315 LECTURE SERIES 2023

INFORMATION STORAGE IN MEMORY ENGRAMS

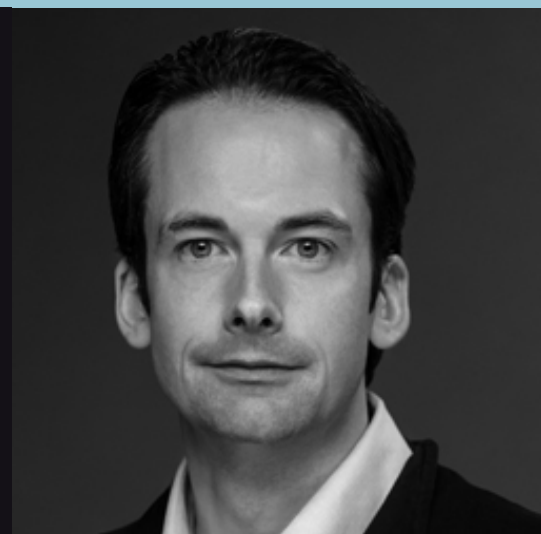
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INFORMATION STORAGE IN MEMORY ENGRAMS

How is learned information stored in the brain and how does it interact with the innate representations that underlie instinct? The result of the plasticity that accounts for a given memory can be broadly referred to as an engram. In recent years, the term engram has been operationalized as an ensemble of cells that is activated by a learning experience, undergoes plasticity, and enables specific memory recall. Engram labelling methodologies are now opening new avenues for investigating how learned and innate representations are behaviourally expressed.

In this lecture, I will introduce the background of the broader memory engram field. I will describe how engram cell labelling methodologies allow us to genetically label, observe, and manipulate the specific ensembles of neurons that encode particular memories in the rodent brain. I will then describe our recent research on innate and acquired forms or long-term forgetting in the mouse, by focussing on natural forgetting in adults and infantile amnesia during development. I will outline a novel framework that considers both natu-

ral and pathological forgetting to be predictive processes that involve the interaction of a subject's priors with perceptual experience. I will introduce a perspective whereby instincts can be conceived as innately constructed 'ingram' ensembles that can functionally interact with memory engrams. Finally, I will describe our recent research into how instinctual behaviour can change with experience, by probing the mouse's innate ability to respond to visual and olfactory affordances.

About the Speaker

Tomás Ryan is Associate Professor of Biochemistry at the Trinity College Institute of Neurosciences (TCIN), Trinity College Dublin, at The University of Dublin.

This invited talk is hosted by AG Buss & Shing (Bo4). Claudia Buss will introduce and moderate the talk.

Certificate of attendance:

Please contact team assistant [serenella.brinati.1\(at\)hu-berlin.de](mailto:serenella.brinati.1(at)hu-berlin.de)



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