



SFB 1315

Mechanisms and Disturbances in Memory Consolidation:
From synapses to systems

Tuesday

JAN 16, 2024
4:00 pm CET

BCCN Lecture Hall
Philippstr. 13, Haus 6
Meeting ID: 775 491 0236
SFB1315.ifb@hu-berlin.de

SFB 1315 LECTURE SERIES 2024

HOW DOES A NEURON DECIDE WHEN AND WHERE TO MAKE A SYNAPSE

P. ROBIN HIESINGER

Professor of Neurobiology
Institute for Biology
Free University Berlin



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Precise synaptic connectivity and individual neuronal decisions to make or break synapses are prerequisites for the function of neural circuits.

Yet, individual neurons, taken out of their developmental and functional context, readily form unspecific synapses. How does genetically encoded brain wiring deal with this apparent contradiction?

Brain development and function are not only characterized by precision, but also flexibility and robustness. Cellular interactions are restricted in space and time, including restrictive interaction dynamics and the molecular and cellular competency to form synapses.

This seminar will explore the question how an individual neuron decides when and where to make a synapse in the living *Drosophila* brain.

Our findings highlight that pattern formation during growth and the kinetics of live neuronal interactions restrict synapse formation and partner choice for neurons that are not otherwise prevented from making incorrect synapses in this system. For example, cell biological mechanisms

like autophagy as well as developmental temperature restrict inappropriate partner choice through a process of kinetic exclusion that critically contributes to wiring specificity. The seminar will explore these and other neuronal strategies when and where to make synapses to yield precise, flexible and robust outcomes in brain wiring.

About the Speaker

P. Robin Hiesinger is a Professor for Neurobiology at the Institute for Biology, Free University Berlin

This talk is hosted by SFB1315 projects A04/A10 PI Matthew Larkum.

Certificate of attendance:

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