



SFB 1315

Mechanisms and Disturbances in Memory Consolidation:
From synapses to systems

Monday

JUNE 27, 2022
4:00 pm CET

Hybrid Event
BCCN Berlin &
ZOOM: 7754910236

SFB 1315 LECTURE SERIES 2019-2022

THE CELLULAR AND MNEMONIC BASIS OF “AHA” MOMENTS

JAAN ARU, PhD

Associate Professor
Institute of Computer Science
University of Tartu, Tartu, Estonia



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Jaan Aru, PhD

Associate Professor
Institute of Computer Science
University of Tartu, Tartu Estonia

**How do we come up with new ideas?
Why are they sometimes accompanied
by a strong feeling of “aha”?**

Rapid advances in understanding the cellular mechanisms of quick learning have brought us close to answering these questions. Also, although aha moments have been historically studied relatively independently of memory research, an argument can be made that aha moments arise from and have consequences for memory processes.

Our central hypothesis is that insight at the cognitive level corresponds to specific effects of rapid plasticity at the cellular level.

I will illustrate this conjecture by showing correspondences between the processes on cognitive and cellular levels. Furthermore, one curious feature of aha moments is that novel ideas often occur during relaxed states of quiet wakefulness. Intriguingly, this is also the state where sequences of place cell firing are

generated and propagated to the rest of the brain.

I will discuss how hippocampal sequences might contribute to the emergence of new ideas. I will also present and discuss a new dataset of images we have developed to study aha moments in humans.

Jaan Aru's talk is hosted by SFB1315
Speaker Matthew Larkum.

Where:

Bernstein Center for Computational
Neuroscience (BCCN)
Philippstraße 13/Haus 6
10115 Berlin

Certificate of Attendance:

Contact team assistant Serenella Brinati.
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Register (in person attendees): Contact
coordinator Marylu Grossman.
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A BBQ will follow at BCCN after the talk.
All are welcome to attend.



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