Colloquium SFB 779

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Role of adult hippocampal neurons in memory: implication for cognitive aging

Tuesday, May 14, 2019 at 3 p.m.

Leibniz Institute for Neurobiology
Brenneckestr. 6, 39118 Magdeburg
Ebbinghaus Lecture Hall (ground floor)

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Role of adult hippocampal neurons in memory: implication for cognitive aging

Understanding the cellular mechanisms underlying learning and memory is a major challenge in neurobiology. The discovery of a *de novo* hippocampal production of neurons in the adult brain has been a breakthrough in the field of plasticity, memory and cognitive aging. I will review our current knowledge on the role of these adult hippocampal new neurons in memory. In particular I will show that they are required for relational memory, behavioral pattern separation and pattern completion. Then I will highlight the importance of this form of plasticity in the aging of memory function taking into account individual differences, life experiences, the ontogenetic stage of the animals and the age of the adult-born neurons. Finally I will conclude on the relevance of this process for memory processes in human.