



Life Sciences Seminar

Unravelling the interplay of AMPA receptor interactions controlling synaptic strength

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Host: Peter Jonas

Excitatory synaptic transmission involves the presynaptic release of glutamate, to be detected by receptors localised at the postsynaptic membrane. Critically, this transmission is plastic, allowing information storage at these sites of intercellular communication. At the hippocampal CA1 synapse, a change in the number of postsynaptic AMPA receptors (AMPARs) responding to glutamate release is a principal mediator of synaptic plasticity. For this reason, the mechanisms controlling synaptic AMPAR recruitment and anchoring have been intensely studied for many years. While historic research has focussed on intracellular receptor interactions in the postsynaptic density, we have demonstrated that the extracellular region of the AMPAR, which projects into the synaptic cleft, is a critical mediator of AMPAR synaptic anchoring. I will discuss how an interplay of intracellular and extracellular AMPAR interactors with unique roles in AMPA receptor positioning, acts to control the strength of synaptic transmission. As extracellular receptor interactions occur within the synaptic cleft, both pre- and postsynaptic neurons have the potential to control and detect the strength of transmission, with profound implications when considering how information is stored at a synaptic connection.

Monday, December 16, 2019 03:00pm - 04:00pm

Seminar Room, Lab Building East



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.