



## Seminar/Talk

# NDT by Sandra Siegert and Jake Watson

**Sandra Siegert and Jake Watson**

ISTA

Host:

Speaker: Sandra Siegert (PI, Siegert Group) Title: Recovery of ketamine-anesthesia differs between sexes Abstract: Brain network activity depends on an adequate interplay between neurons across brain regions. Anesthetics like ketamine induce a reversible state in brain oscillation and alters the excitatory action in the brain. We have recently shown that repeated ketamine-induced anaesthesia causes the loss of the perineuronal nets (PNN), a physical extracellular barrier that surrounds interneurons, and reestablishes juvenile ocular dominance plasticity in the adult mouse visual cortex (V1). Microglia are key in enabling this PNN dismantling, since their depletion prevents this effect. Still, the microglia-neuronal signatures that gives rise to the ketamine-induced plasticity is still incomplete. In solving this question, we decided to look at acute effects of ketamine and discovered sexual differences on the neuron- and microglia-level with consequences on brain oscillation network. Speaker: Jake Watson (Postdoc, Jonas Group) Title: Determining the microcircuits of the human brain Abstract: Our brains action arises from a constant flow of activity through specific cells via specific synapses. Therefore understanding brain functioning requires an understanding of the properties and wiring of functioning microcircuits. The vast majority of our knowledge of mammalian circuit function comes from rodent research yet how much of this actually applies to the human brain cannot be known without analysis of human tissue. I will discuss how we are working to determine the microcircuit properties of the human hippocampus. Using patient derived tissue in a cross species analysis we can both directly report the properties of human circuits, but also provide a perspective on evolutionary conserved and divergent features of circuit function.

**Tuesday, November 21, 2023 04:00pm - 05:00pm**

Central Bldg / O1 / Mondi 2 (I01.O1.008)



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