

## Selected Publications

Hadar R, Vengeliene V,..., **Winter C**. Paradoxical augmented relapse in alcohol dependent rats during deep brain stimulation in the nucleus accumbens. *Translational Psychiatry*, 2016 – in press.

Edemann-Callesen H\*, Voget M\*,..., **Winter C**. Medial forebrain bundle deep brain stimulation has symptom-specific anti-depressant effects in rats and as opposed to ventromedial prefrontal cortex stimulation interacts with the reward system. *Brain Stimulation*, 2015; 8(4):714-23.

Mattei D\*, Djodari-Irani D\*,..., **Winter C\***, Wolf SA1\*. Minocycline rescues decrease in neurogenesis, increase in microglia cytokines and deficits in sensory-motor gating in an animal model of schizophrenia. *Brain, Behavior and Immunity* 2014; 38:175-84.

Giovanoli S, Engler H, Engler A, Richetto J, Voget M, Willi R, **Winter C**, Riva MA, Mortenson PB, Schedlowski M, Meyer U. Stress in puberty unmasks latent neuropathological consequences of prenatal immune activation in mice. *Science* 2013;339(6123):1095-9.

Klein J, Hadar R, Götz T,..., **Winter C**. Mapping brain regions in which deep brain stimulation affects schizophrenia-like behavior in the poly I:C rat model of schizophrenia. *Brain Stimulation* 2013; 6(4):490-499.

# Bonn Lecture Series in Neuroscience



## Rats' contribution to brain stimulation in psychiatry

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Thursday, June 16<sup>th</sup> 2016, 16:00h

Dept. of Epileptology, Seminar Room, Ground Floor

Mental disorders are leading the list of highly prevalent disorders, causing major individual burden of disease and high direct and indirect economic costs. Satisfactory treatment of mental disorders remains as arguably one of the greatest challenges in modern medicine: conventional treatments are often associated with poor symptom alleviation, treatment resistance and side-effects severe enough to require discontinuation of the treatment.

Given its unique ability to target specific brain regions and retune pathological networks, deep brain stimulation (DBS) has emerged as the most momentous neuromodulatory strategy for the treatment of mental disorders including obsessive compulsive disorders, Tourette Syndrome, depression and alcohol addiction. However, promising results yielded in open-label trials failed to be replicated unequivocally in multicenter, prospective, randomized trials, indicating that to date the support of the application of DBS in psychiatry by high-quality clinical data is limited.

From the several reasons that we believe has lead to this poor outlook, it follows that we need to (1) consider bio-behavioral dimensions that cut cross current heterogeneous categories, (2) carefully associate symptom manifestation with the development of circuit-based deficits and (3) use preclinical approaches as the starting point such that disorders are considered as disruptions of physiological systems. This talk presents some examples on how the use of rodent models promotes these scientific ambitions.