Two PhD Positions in preclinical epilepsy research at Ghent University (Belgium)

4BRAIN currently has two PhD positions available **on in vivo optogenetic and optopharmacological inhibition of epileptic seizures in preclinical rodent models of epilepsy**. Epilepsy is the fourth most common neurological disorder after migraine, stroke and Alzheimer's disease. Standard treatment for epilepsy consists of pharmacological treatment with anti-epileptic drugs. However, about one third of the patients is medication-resistant and many patients suffer from severe side effects of the medication. Many of these problems result from the fact that the drugs influence the whole body at all times, while effects are only needed at specific time points and in specific part of the brain.

One of the missions of 4BRAIN lab (headed by Prof. dr. Paul Boon, Prof. Dr. Kristl Vonck and Prof. dr. Robrecht Raedt) is to enhance temporal and spatial specificity of epilepsy therapy. Optogenetic and optopharmacological inhibition of epileptic seizures involve the use of light for on-demand activation of inhibitory proteins or drugs specifically in epileptic brain networks. This technology requires the use of advanced optic probes and state-of-the-art electrophysiology and neuroimaging techniques to fine-tune how, when and where to illuminate for interrupting epileptic seizures.

Applicants should have a background in biomedical sciences, biomedical engineering, biotechnology or related discipline and have a strong interest in the domain of neurosciences, preclinical research and electrophysiology. Applicants should be excellent, collaborative and dynamic individuals who like to work in a multidisciplinary research environment. Applicants should have good knowledge of the English language and good communication skills (written and oral). Candidates will be selected based on excellent study results, motivation, good scientific reasoning and recommendation letters by previous supervisors.

The department of Head and Skin at Ghent University offers access to several preclinical models for epilepsy research and several preclinical research techniques, including state-of-the-art stereotactic neurosurgery, *in vivo* and *in vitro* neurophysiological recording and neuromodulation techniques (including optogenetics and optopharmacology), *in vivo* neuroimaging techniques (small animal fMRI, µPET, µSPECT, µCT, optical imaging) and advanced signal analysis techniques.

Both PhD positions cover a four year period with starting date between October 2019 and December 2019.

Interested candidates should send a CV, motivation letter, and two reference letters to Robrecht.Raedt@ugent.be before September 30th 2019.