

Neurobiology Internship - Epilepsy

Title: Investigating ion channel composition and action potential machinery involved in Epilepsy

Organization: Synaptica

Location: Toernooiveld 100, 6525 EC Nijmegen. Synaptica is part of Mercator Launch – an incubator for start-ups with ties to the Radboud University Nijmegen.

Duration: 3-12 months

About Us: Synaptica utilizes publicly available large-scale neuroscience datasets and computational tools to gain new understandings of Epilepsy.

Internship Overview: Are you interested in the relationships between the molecular & ion channel composition and the complex behavior of neural circuitry dysfunction that occurs in epilepsy? We are looking for neurobiology students to investigate the molecular literature on epilepsy and translate this into functional consequences of cellular (mis)behavior. You will be working to investigate the impact of these findings on spiking brain circuits using computer simulations of realistic spiking neurons. The aim is to find out how individual differences can explain epilepsy variability and treatment response. Being able to perform computer programming yourself is a plus, but not obligatory as you will work with a team of computational neuroscientist who will help to implement your findings into our computer model.

Key Responsibilities:

1. **Literature Review:** Provide in-depth knowledge on the molecular machinery and ion channels involved in epilepsy.
2. **Data collection:** Collecting and understanding publicly available brain data sets for implementation into the simulation model.
3. **Results:** Find and interpret correlations between alterations in the molecular action potential machinery and the results of the simulation model.

Questions: Contact Dr. Marijn Martens at marijn.martens@synaptica.nl