

2024-2025: Research & literature internships – Epilepsy and channelopathies

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

Organizations: Synaptica & Donders Institute Nijmegen

Duration: 1-12 months

Internship Overview: Are you interested in the relationships between the molecular & ion channel composition and complex behavior of neural circuitry dysfunction that occurs in channelopathies such as epilepsy? We have internships available for ambitious students with a background in neuroscience, physics and/or AI. Using Protein Language Models such as AlphaFold2 (by Google's DeepMind), we predict the functional consequences of ion channel genetic mutations. We study these consequences in our computer model of biologically realistic spiking brain circuits and validate our predictions in genetic datasets. 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.

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

Team Synaptica

