

Two funded MSc positions available in the Van Raay Lab

Start Date: May 1, 2022 or as soon as possible.

Project: Assessment of different diets on neural development

More and more research supports the old adage 'you are what you eat'. Indeed, much attention is now given to our diets and the western diet in particular has gained some notoriety for its lack of nutrition and fiber, which is contributing to mental health issues. In contrast, the Mediterranean diet, high in fiber, nuts, fruits and vegetables has been associated with better mental health. However, we don't know how these different diets actually impact the brain. Unfortunately, there are too many variables in human epidemiological studies (age, weight, lifestyle, compliance) and insufficient readouts (questionnaires, behavioral tests) to make significant conclusions about how specific diets impact mental health. To overcome these challenges requires innovative experimental models. Here, we will use the "Robogut," pioneered by Dr. Emma Allen Vercoe, to recreate the human colon in the lab. We will feed the robogut different diets and collect the by-products or metabolites it produces. To understand how these metabolites affect the brain, we are going to add these metabolites to the developing zebrafish embryo, which is just a day old and is highly sensitive to environmental metabolites. We will then compare the different diets for changes in gene expression, brain development, axon guidance and simple behaviours. If this sounds interesting to you please forward your CV and unofficial transcripts to tvanraay@uoguelph.ca.