

PhD on modeling the bile acid circulation in humans and prediction of liver diseases

Non-alcoholic fatty liver (NAFL) and non-alcoholic steatohepatitis (NASH) are diseases associated to excessive fat in the liver which is not due to the consumption of alcohol. Those diseases are the most common liver disorder and are present in about 25 percent of the population worldwide. The goal of this PhD project is to build a dynamical model able to predict the disease based on non-invasive techniques. The role of gut microbial enzymes is thought to be key in the circulation process and will be studied carefully. For this, we will rely on machine learning techniques coupled to dynamical modeling. The dynamical model will be calibrated based on an unprecedented dataset collected by the lab of Isabelle Leclercq.

We are seeking one PhD student in systems biology to work in the lab of Isabelle Leclercq from UCLouvain (<https://uclouvain.be/fr/instituts-recherche/irec/gaen>) and the Data Lab of VUB with Sophie de Buyl (<https://data.research.vub.be/> & <https://aphy.research.vub.be/prof-dr-sophie-de-buyl>).

Applicants must hold a master's degree in physics, mathematics, chemistry, (bio)engineering or equivalent. Experience with biological and/or dynamical modelling is an advantage. Applicants must be proficient in both written and oral English. Personal and relational qualities will be emphasized. The candidate will apply to the different funding sources available in Belgium to fund the PhD (e.g. FRIA, Aspirant FRNS and FWO).

To apply send your CV, a motivation letter and the contact information for two letters of recommendation to Isabelle Leclercq (isabelle.leclercq@uclouvain.be) and Sophie de Buyl (sdebuyl@vub.be). Feel free to contact us for more information about the position.