Prof. David Suter – open position

Protein turnover control is central to normal cellular physiology and its alteration is involved in many aging-related conditions. In the brain, perturbations of protein turnover can directly lead to neurodegenerative diseases. Therefore, understanding how alterations of protein turnover emerge over the course of these diseases is of paramount importance. The project will focus on developing a strategy allowing to quantify protein turnover of individual human neurons in both healthy and neuropathological contexts. You will engineer human pluripotent stem cells to express a fluorescent protein turnover sensor that we recently developed, differentiate these cells towards various types of neurons, and perform live cell quantitative microscopy coupled to mathematical modelling to quantify protein turnover. This will allow to address the two different aims of this project:

i) Understand how causal features of Alzheimer's and Parkinson's diseases impact protein turnover;
ii) Establish a high-throughput imaging platform allowing to screen for modulators of protein turnover.