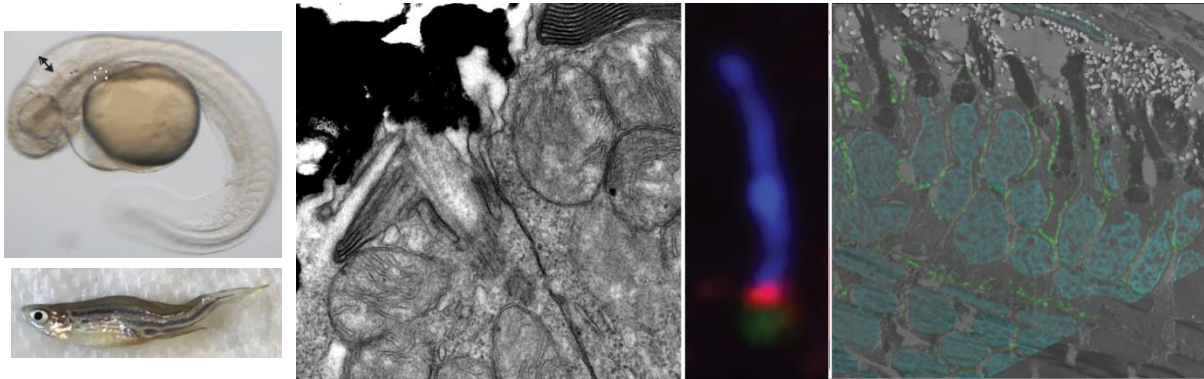


Master thesis project in cilia biology



Modeling ciliopathies in the zebrafish

We are looking for a highly motivated biology or biochemistry student for a Master project. Background in molecular biology, strong motivation and willingness to work in a multi-disciplinary, collaborative team are important prerequisites.

Ciliopathies are a group of human disorders caused by dysfunction of primary cilia, ubiquitous organelles found on the surface of most vertebrate cells where they transduce a variety of external signals to the cell, including sensory signals (light, olfaction), chemical and mechanical signals (kidney tubules) and signaling pathways during development and cell homeostasis (Sonic Hedgehog).

Zebrafish has become a major disease model for ciliopathies given that ciliary genes are well conserved in zebrafish and that the same variety of cilia types exists in zebrafish and humans. Technical strengths of this model system include ease of genetic manipulation with reliable generation of mutant and transgenic fish lines as well as excellent imaging conditions given the transparency of the embryos.

The aim of this project is the phenotypic characterization of zebrafish mutants in ciliopathy genes.

Techniques:

A range of whole organism, cellular, molecular, imaging and genetic approaches will be used, such as immuno-histochemistry, live imaging in transgenic lines, light and electron microscopy (confocal, spinning disk, transmission and scanning electron microscopy, CLEM), western blot analysis, visual behavioral assays, etc.

Info & Contact: Ruxandra Bachmann

Starting date is open.

For more info please contact: ruxandra.bachmann@imls.uzh.ch