We focus on characterising and investigating molecular mechanisms in lipid and polyamine transport and metabolism in humans and fungi.

**Research Areas:** membrane proteins, membrane transport, lipid synthesis, electron microscopy, X-ray crystallography, biochemistry.

**Lipid flippases**
Lipid flippases play a central role in membrane modelling and cell homeostasis by driving the inward transport of lipids in the membrane and are localised throughout the membranes of the secretory pathway. A number of lipid flippases recruit a variety of proteins involved in membrane remodelling, however the structure and function of these complexes remain unknown.

**What are we interested in?**
Our research examines the molecular interactions dictating lipid specificity and transport, the mechanisms behind transporter regulation and activation, and the structural and functional role of discrete mutations implicated in rare neurological disorders.

**Polyamine transporters**
PSB-ATPases are ATP driven polyamine transporters exclusive to eukaryotes. They are located throughout the endo-lysosomal system and are implicated in a spectrum of human disease, in particular neurological diseases such as Parkinson’s disease.

**What are we interested in?**
Our research examines the mechanisms underlying 1) substrate transport, 2) transporter regulation and activation, and 3) the structural and functional role of disease associated mutations.

**Projects**
A variety of BSc and MSc projects are available with a focus on transmembrane transport of lipids and polyamines. As a BSc/MSc student in our group, you will get a proper research project, working together with a day-to-day supervisor, with the opportunity to develop your competences in Molecular Biology, Biophysics, Biochemistry and Structural Biology.

We have an opening for one BSc and one MSc student – join us and have fun! If interested, contact: lyons@inano.au.dk

**References**

Contact: lyons@inano.au.dk