

## Master Thesis Projects: Molecular plasticity and generation of nerve impulses

We are offering Master's thesis projects in molecular plasticity and generation of nerve impulses commencing August or as soon as possible hereafter.

**Project description:** Nerve impulses are initiated in a small subdomain in the beginning of the axon, the axon initial segment. Recent research has uncovered that the axon initial segment is endowed with an unanticipated dynamic structural and molecular complexity and that this complex plasticity regulates nerve impulse generation. In the Membrane Trafficking lab, we dissect the structural and molecular plasticity to shed light on the molecular basis for the regulation of this major decision-making process in a nerve cell – when the cell chooses to fire or not.

**Main methods (Depending on the project):** Primary hippocampal cell cultures, various cloning techniques, transfections of cultured neurons, various imaging techniques (confocal microscopy, live cell imaging, super resolution), optogenetics, Western blotting, immunoprecipitations.

### Scientific environment

The candidate will be part of the Membrane Trafficking group headed by Associate Professor Hanne Borger Rasmussen. The Membrane Trafficking group is embedded within the Ion Channel Group at Department of Biomedical Sciences. We offer an interesting and challenging project in an international environment focusing on ion channel research. The research focus of the Membrane Trafficking group is on the subcellular organization of ion channels in neurons, how this organization is established and regulated and how deficits in ion channel organization contribute to neurological disease. Visit our website for a more detailed description of the research activities and the members.

([https://bmi.ku.dk/english/research/the\\_ion\\_channel\\_group/membrane\\_trafficking/](https://bmi.ku.dk/english/research/the_ion_channel_group/membrane_trafficking/))

**Your qualifications:** You are highly motivated and studying Human Biology, Molecular Biomedicine, Biology, Biochemistry, Molecular Biology, Biotechnology or a similar course of studies. You are flexible, ambitious and can work independently.

**Application:** Contact Hanne Borger Rasmussen ([hannebr@sund.ku.dk](mailto:hannebr@sund.ku.dk)), including a CV and grade transcript.

### Place of project and contact information:

Associate Professor Hanne Borger Rasmussen, Department of Biomedical Sciences, The Maersk Tower, Blegdamsvej 3, 7.09.46, 2200 Copenhagen N. For further information, please contact Hanne Borger Rasmussen ([hannebr@sund.ku.dk](mailto:hannebr@sund.ku.dk)).