

Master thesis

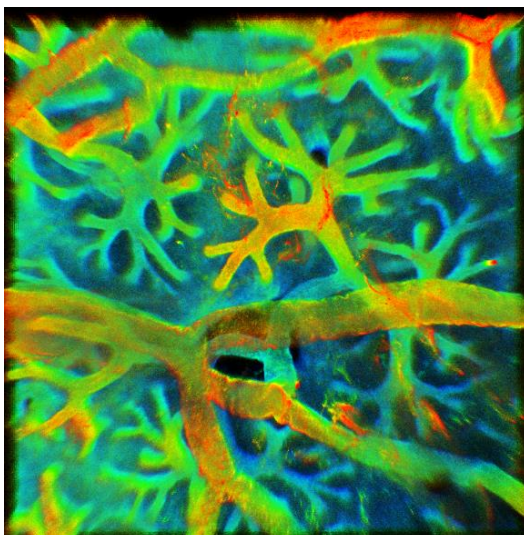
in the Master program

Biochemistry and Molecular Biology
or *Ecology, Evolution, and Conservation*



Electrocytes in the electric fish *Campylomormyrus compressirostris*: 3-dimensional organization and innervation

The African weakly electric mormyrid fish use their electric organ for intra-species communication and object localization. The electric organ is composed of electrocytes, specialized striated muscle cells with a quite peculiar and complex morphology. Closely related species have strikingly different discharges, a trait used to find conspecifics and mating partners. In order to analyse species-specific differences and developmental changes in electrocyte morphology, organization and physiology, we develop methods for the 3-dimensional imaging and visualization of these cells.



In this project on the weakly electric fish *Campylomormyrus compressirostris*, we will use immunofluorescence staining, confocal imaging techniques and 3-dimensional reconstruction methods to determine the 3-dimensional structure of electrocytes and their innervation pattern. An additional aim of the thesis is to analyse the subcellular distribution of ion transporters and channels that are required for the electrical activity of these cells.

Starting date: variable

Prerequisites:

Profound knowledge in cell biology; keen interest in microscopic techniques; care in the handling of expensive and sensitive technical equipment

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