



Master Thesis Call

Generating a “self-rebalancing” redox detoxification system in the endoplasmic reticulum of *Pichia pastoris*

Your opportunity to learn hands-on about

- microbial **cultivation systems**,
- state-of-the-art **molecular biology** techniques such as Golden Gate cloning and CRISPR/Cas9-based recombination,
 - investigation of physiological responses via **real-time PCR**,
- determination of organelle-specific reduction potential by means of **redox biosensors, fluorescence microscopy** and **flow cytometry/FACS**.

Your focus will be **expressing and characterizing a synthetic H₂O₂ detoxification system** in the endoplasmic reticulum of *Pichia pastoris* strains upgraded to produce disulfide-bonded recombinant proteins.

Disulfide-bonded proteins include a wide variety of **industrially relevant therapeutics and bulk enzymes**. However, the metabolic processes involved in disulfide bond formation are known to be challenging because of the oxidative toxicity of H₂O₂ as their main byproduct.

Your time will be spent at the **Department of Biotechnology** of the University of Natural Resources and Life Sciences in Vienna.

Start-End dates:

October/November 2020 – March/April 2021

If you are a motivated, ambitious and a proactive Master/Erasmus student and you are interested in this topic, please contact:

Brigitte Gasser, Assoc.Prof. Dipl.-Ing. Dr.
brigitte.gasser@boku.ac.at

Arianna Palma, MSc.
arianna.palma@boku.ac.at