Master thesis project:
‘Isolating yeasts from historical artifacts’

Do you want to contribute to establishing a historic record of yeast and its use throughout history?

While commercial yeast is a predictable companion for brewing beer or baking bread it lacks the subtle differences in flavor that is brought by natural communities of yeast (think sourdough)- cherished by fermentation experts and consumers alike. Yeast cells are everywhere; in the air you breathe and in your house, and they are distinct, for example, is the natural yeast community you find in your kitchen different from the one in your neighbor’s house. Here the student will attempt to isolate yeast from specific historical artifacts traditionally used for baking and brewing in order to investigate the molecular differences between yeast strains from various historical periods. To do this, the master student will develop and test a method for the isolation of yeast from items provided by Upplandsmuseet (the county museum of Uppsala county). Isolates will then be genome sequenced for state-of-the-art comparative genomics analysis to investigate molecular differences compared to available reference genomes. If successful, this project will considerably advance our understanding of yeast adaptation and the use of museums for tracking yeast evolution.

Goals

- Isolate yeast from specific items within museum collections
- Propagate and characterize the resulting yeast strains using microbiological and molecular methods (e.g. genomics)
- Test yeast for leavening abilities in bread making

Training

State-of-the-art methods in microbiology and molecular biology

Requirements

Motivation and scientific curiosity. Experience in **microbiology or molecular lab environments** necessary. Knowledge in yeast cultivation and comparative genomics desired.

Useful information

- Start date: as soon as agreed upon
- This project will be co-supervised by Anna Rosling (department of Ecology and Genetics) and Lars Behrendt, from the department of Organismal Biology (EBC).

Contact: anna.rosling@ebc.uu.se; lars.behrendt@ebc.uu.se