

## HALRIC Research Internship Programme

## Internship Proposal

**Project Title:** Investigating Allosteric Communication in fluoroacetate dehalogenase (FACD)

**Name of Institution/Country:** University of Hamburg, Germany

**Name of internship provider:** Dr Caitlin Hatton (Postdoc), Dr Pedram Mehrabi (Group leader)

**Contact details:** [caitlin.hatton@uni-hamburg.de](mailto:caitlin.hatton@uni-hamburg.de), [pedram.mehrabi@uni-hamburg.de](mailto:pedram.mehrabi@uni-hamburg.de)

**Proposed timeframe:** 2-6 months (to be decided jointly with the candidate)

**Application deadline:** August 1st, earlier applications welcome, starting date flexible-can be decided jointly with the candidate

**Administrative contact person at the organisation:** Elena Kornilova

**Scientific research questions**

The research investigates the allosteric communication that occurs in fluoroacetate dehalogenase (FACD) between the two protein subunits, this allosteric communication modulates substrate turnover and answers questions in fundamental biochemistry.

**Experimental approach**

We currently use a combination of ultrahigh and time-resolved crystallography and enzyme activity, and other biophysical methods to observe and understand allosteric communication.

**Tasks of the intern**

- General Lab Duties (making competent cells, communal reagents)
- Protein Expression and Purification (Established methods)
- Protein Crystallisation
- Protein Assay's (Established methods)
- Data Analysis and Interpretation

**General information about the work group, the university and the region**

The Mehrabi group specialises in time-resolved x-ray crystallography of proteins (<https://www.physik.uni-hamburg.de/en/inf/ag-pearson/subgroup-mehrabi.html>), based in the HARBOR building at the University of Hamburg on the Hamburg Bahrenfeld campus. HARBOR is a collaborative and welcoming interdisciplinary research building. The University of Hamburg is a world-leader in time-resolved structural biology due to its position and collaboration with EMBL And DESY facilities.

**Eligibility and qualification of the applicant.**

We are looking for a motivated MSc/BSc student in biophysics, structural biology, biochemistry or related field, due to the interdisciplinary work, backgrounds in chemistry, physics, or biochemistry are encouraged to apply.