

# A Master Student in Molecular Neurodevelopmental Research

**IMB** ([www.imb.de](http://www.imb.de)) is a research institute on the campus of the Johannes Gutenberg University in Mainz, Germany. It is generously funded by the Boehringer Ingelheim Foundation and the state of Rhineland-Palatinate. Our research focuses on the biology of the cell nucleus and ranges from the molecular level to systems and computational approaches. Researchers at IMB are supported by strong core facilities that offer state-of-the-art services in bioinformatics, cytometry, genomics, microscopy, proteomics, and protein production.

## Background

Human brain development is spatially and temporally tightly controlled, with sequential and precise orchestrated cellular and molecular programs. Any perturbation in these progresses can lead to detrimental effects. For example, mutations in genes encoding for epigenetic regulators, especially for the BAF chromatin remodeling complexes, are frequently causative for neurodevelopmental disorders. These manifest in brain abnormalities, intellectual disabilities and other physical aberrations. We still hardly understand the molecular mechanisms during human brain development that are mediated by these regulators and how their mutations manifest into the disease phenotypes.

BAF chromatin remodeler complexes are large multi-subunit complexes that can slide or eject nucleosome and thereby regulate chromatin accessibility and ultimately gene expression. Recently, we have shown that the maintenance of chromatin accessibility requires constant BAF complex activity and that perturbation of their function during brain development can result in severe molecular, cellular and phenotypic alterations.

## The position: Deciphering the role of BAF complexes in human brain development and neurodevelopmental disorders

As part of the [chromatin regulation group](#), you will be working on a project addressing the role of BAF chromatin remodelling complexes in human brain development and related diseases. As a model system, you will use the differentiation of human induced pluripotent stem cell (hiPSC) into brain organoids in combination with genetic and pharmacological perturbations. Advanced cell and molecular biology techniques, including bulk and single cell genomics, proteomics and microscopy, will be used to unravel the cellular and molecular mechanisms driven by BAF chromatin remodelers.

We are looking for a Master student to work with us for at least 6 months, with the possibility of continuing as a PhD student.

## Tasks & responsibilities

- hiPSC culture and organoid differentiation
- Planning, optimization and execution of various state-of-the-art molecular and cellular biology methods
- Data analysis, documentation and presentation
- Regularly participate and present at (internal) meetings
- Study of relevant scientific literature

## Requirements

- Highly motivated and creative student who enjoys bench-work
- Basic experience in cell culture techniques is highly beneficial
- Enthusiasm about science especially with regard to neurodevelopmental processes, gene regulation and epigenetics
- Ability to work precisely and good attention to detail
- Ability to work independently after an initial training period
- Very good oral and written communication skills in English
- Computational skills are an asset but not compulsory

## Why joining us

As a master student at IMB, you will be part of our Internship Programme ([www.imb.de/internships](http://www.imb.de/internships)). We offer a stimulating, diverse and international research environment, with a pleasant working atmosphere and the opportunity to perform state-of-the-art experiments. The institute is modern, well-equipped and centrally located with good public transport links and parking.

## Our offer includes

- Advanced training opportunities
- Employee events
- Flexible working hours

## What else you need to know

- **Starting Date: June 2024 or later**
- **Duration: at least 6 months**
- **Deadline: 30 April 2024**

## Have we sparked your interest?

To apply, please download our application form and follow the instructions published on our website: [www.imb.de/internships/apply](http://www.imb.de/internships/apply). Please send a **single PDF file** containing your application form fully completed, CV, certificates and contact information of at least one professional reference to [training@imb-mainz.de](mailto:training@imb-mainz.de). IMB is an equal opportunity employer.

## Declaration of Consent and Data Protection

By sending us your application, you are consenting to us saving your personal data in order to carry out the selection process. You can find more information on data protection and retention periods at [www.imb.de/jobs/data-protection](http://www.imb.de/jobs/data-protection).