

# Master thesis in the field of genomics and transcription regulation



*The Research Institute of Molecular Pathology (IMP) in Vienna pursues world-class research in basic molecular biology. It is located at the Vienna BioCenter and largely sponsored by Boehringer Ingelheim. With over 200 scientists from 40 countries, the IMP is committed to scientific discovery of fundamental molecular and cellular mechanisms underlying complex biological phenomena.*

We are looking for a highly motivated master student, who is interested in the field of genomics and transcription regulation. The position will be available from January 2020 in the research group of Alexander Stark at the IMP.

## **Background:**

The development and homeostasis of an organism depends on the accurate regulation of gene expression to ensure that particular sets of genes are expressed correctly in time and space. Gene regulation implies that cells need to efficiently silence those genes that should not be expressed – failure to do so leads to severe developmental defects and diseases like cancer. However, despite its importance, our understanding of gene silencing is largely lacking.

## **Project:**

This master thesis project aims to understand how transcriptional repressors achieve efficient gene silencing. We will study how a transcriptionally active state (left panel) changes during silencing upon repressor recruitment (right panel). To address this question we will combine multiple state-of-the-art techniques including: Chemically Induced Proximity (CIP) to recruit repressors, CRISPR-Cas9 to generate modified cell lines, fluorescence-activated cell sorting (FACS) and Chromatin immunoprecipitation-qPCR (ChIP-qPCR). This project will provide novel insight into how transcriptional repressors are actively silencing transcription, addressing a long standing question in the intriguing field of transcriptional regulation.

## **Requirements:**

Applicants should hold a BSc degree in molecular biology or a related field, with at least 3 months of laboratory experience, particularly in the fields of molecular biology. The research Institute of Molecular Pathology (IMP) and Stark lab provide an international environment, requiring the candidate to have excellent oral and writing communication skills in English. This thesis project will span one year and the successful candidate will receive a monthly stipend of € 500,- (a living allowance is also available for applicants from outside Vienna).

***If you are interested, please send your CV & motivation letter to***

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