

PhD Project Description

School/Department:	Department of Cell biology, Erasmus MC
Supervisor information:	<ul style="list-style-type: none"> • Eskeatnaf Mulugeta, Ph.D., MSc., MBT., MBF., principal investigator, e.mulugeta@erasmusmc.nl • Prof dr D. Huylebroeck, d.huylebroeck@erasmusmc.nl • ORCID: 0000-0003-4045-4835 • Website: https://www.erasmusmc.nl/en/research/researchers/mulugeta-eskeatnaf • Selected publication <ul style="list-style-type: none"> • Blood, 2020 DOI: https://doi.org/10.1182/blood.2020004826 • Cell Reports, 2020: DOI: https://doi.org/10.1016/j.celrep.2020.107647 • Stem Cells, 2019: DOI: https://doi.org/10.1002/stem.3111 • eLife, 2019 DOI: 10.7554/eLife.48561 • Nature structural & molecular biology, 2019: DOI: https://doi.org/10.1038/s41594-019-0231-0 • BioRxiv, 2017 DOI: https://doi.org/10.1101/209932 • Genome research, 2016 DOI: http://www.genome.org/cgi/doi/10.1101/gr.201665.115 • Nature medicine, 2016 DOI: https://doi.org/10.1038/nm.4098 • Nature communications, 2016 DOI: https://doi.org/10.1038/ncomms12222 • Nature, 2012: DOI: https://doi.org/10.1038/nature11070 • Cell, 2009: DOI: https://doi.org/10.1016/j.cell.2009.10.034 • Full list of publication: https://scholar.google.com/citations?hl=en&user=o5XA41sAAAAJ
Project Title:	Systems Biology of Signaling and Transcription Factors
Abstract:	<p>Cellular development and differentiation is a tightly controlled process that is orchestrated by the transcriptional regulation of genes. The control of gene transcription entails several layers of regulatory modules. Signaling pathways and their downstream TFs are important components of this gene transcription regulatory module and allow cells to properly respond to environmental cues. This interpretation within the cell's nucleus involves several genes that are organized in gene regulatory networks (GRNs), driving epigenomic and transcriptional changes and thereby cell fate, differentiation and maturation. We are interested in understanding the dynamics of such biochemical cascades and connected GRNs using in embryonic stem cells as a model. The aim of this PhD project is to understand the crosstalk and dynamics of signaling and TFs and their impact on the epigenome. To achieve this, we are using a holistic approach based on perturbation approaches and apply existing/emerging state-of-the-art computational and molecular biology techniques, including the development of novel single cell-omics techniques.</p> <p>Your responsibilities will include co-designing and performing such experiments, analyzing data, and documenting and reporting results in lab- and departmental meetings and at (inter-)national conferences</p>
Requirements of candidate:	<ul style="list-style-type: none"> • We are looking for a highly motivated, hardworking student to join our very international team. Our strength is in using team work to tackle large scientific questions and thus requires a student with good communication skills. • Master degree or MD • Scholarship that will, at least, cover subsistence allowance and international air plane ticket (we could help with the scientific part of your scholarship proposal) • English language requirement: • <i>English speaking countries & Netherlands</i>: no requirement • <i>Other countries</i>: IELTS 7.0 (min 6.0 for all subs), TOEFL 100 (min 20 for all subs).

Application requirements & Deadlines:

<https://www.eur.nl/en/about-eur/erasmus-university-china-centre/csc-scholarship>

Erasmus MC, ranked world

* No.32 for Clinical Medicine US News 2020:

<https://www.usnews.com/education/best-global-universities/clinical-medicine?page=3>

* No. 30 Nature Index for Biomedical Sciences 2019:

<https://www.natureindex.com/supplements/nature-index-2019-biomedical-sciences/tables/healthcare>