MSc research projects: Identifying and characterising causal genes for cardiometabolic risk factors and diseases using image-based screens in zebrafish model systems

The den Hoed lab at IGP's Medical Genetics and Genomics section and SciLifeLab is continuously looking for motivated MSc students for degree projects. The project work will be based at the SciLifeLab hub at BMC in Uppsala. Background information and a description of the research program can be found below. The topic of individual research projects will depend on the student's interests and the requirements of the program at the time of applying.

Description of the research program
Genome-wide association studies (GWAS) have identified hundreds of genetic loci that are robustly associated with cardiovascular and metabolic risk factors and diseases, such as blood glucose, insulin and lipid levels, type 2 diabetes, blood pressure, atherosclerosis, and coronary heart disease. With few exceptions, the causal genes in these loci are still unknown. Before results from GWAS can be translated into findings that can be used in the clinic - for example as novel biomarkers or drug targets - we need to identify and characterise the causal genes. Recent developments in CRISPR-Cas9-based mutagenesis, high-throughout imaging, and image-based analyses have highlighted the zebrafish as a promising model system for large-scale genetic screens.

In our research program, we use epidemiological and bioinformatics approaches to distil valuable information from various –omics data (genomic, epigenomic, transcriptomic, proteomic and metabolomic). In addition, we design and perform high-throughput, largely image-based translational approaches to identify potentially causal genes for cardiometabolic risk factors and diseases using zebrafish model systems. Besides being able to work with state of the art approaches, we provide students with the opportunity to be part of a multidisciplinary research team.

Requirements MSc students
We are looking for enthusiastic, motivated students that are eligible for a ≥30 ECTS project, who enjoy working as part of an international team but can also work independently after adequate instructions. Ideally, candidates have some previous practical experience in working with molecular biological methods.

Please send us a short description of your relevant work experience, your CV and your motivation if you are interested in doing a research project with us. Please also indicate the period during which you are available.

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