# MASTER THESIS PROJECT IN THE FIELD OF BIOTECHNOLOGY

Proteomics tools as antibodies and technological platforms are being increasingly used for analysis of body fluids aiming to identify biomarkers for diagnosis, prognosis, or surveillance of most common disorders. This is crucial for Duchenne and Becker Muscular Dystrophy, two rare disorders that affect only boys with short life expectancy. Patients suffer from progressive muscle weakness that leads to loss of walking ability and if untreated Duchenne Muscular Dystrophy has fatal consequences for the patient.

We now offer master thesis projects related to the identification and validation of biomarkers in blood for muscular dystrophy. The main objective of this project is to develop tools that can aid clinical treatment and care of affected patients. Current diagnostic tests fail in estimating progression of the disorder, or effect of treatment. Several biomarkers have been identified that are associated with the disorder but that have to be further characterized. The project aims to validate biomarkers that are specific, informative and conclusive, and to develop sensitive and accurate immunoassays. The immunoassays should be easy to perform and not cause distress to the patients.

The master thesis will consist of the following parts:

1. Literature study focusing on biomarker validation using suspension bead array technology and reported biomarkers for Duchenne and Becker Muscular Dystrophy
2. Design and planning of validation experiments
3. Execution of the experiments
4. Compiling the data and initial interpretation the results
5. Report writing and final presentation
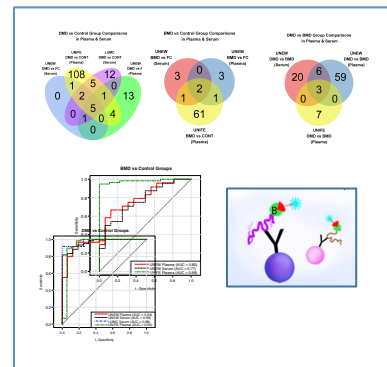
We will accept up to two students, who perform individual projects on e.g. validation of biomarkers in large longitudinal cohorts, development of immunoassays for selected biomarkers or quantification of biomarkers in patient samples, but benefit from collaboration. This project is done in collaboration with Leiden University Medical Center, Newcastle University and University College of London.

Ideal applicants are highly motivated MSc level students from the field of biotechnology, bioengineering or similar. Experience and/or knowledge of high-throughput antibody-based proteomics is advantageous.

Questions and applications are sent to Cristina Al-Khalili Szigyarto at: caks@kth.se