

PhD position on systems biomedicine for unravelling the molecular basis and modeling corticospinal motorneuron disease

A predoctoral position is available to enroll in the PhD student program of Biomedicine at the University of Barcelona, Spain. Work will be carried out in our multidisciplinary, translational research team at IDIBELL, Bellvitge Campus (www.neurometabolic-lab.org), under the direction of ICREA Professor Aurora Pujol, in collaboration with the UPF/PRBB laboratory of Professor Cristina Pujades.

The current knowledge on motorneuron disorders suggests that axonal degeneration is a final consequence of disturbances in diverse processes such as myelin composition, mitochondrial energy production or lipid metabolism. Our main goal is to achieve a systems-based, comparative characterization of motorneuron diseases with overlapping clinical features.

We will apply next generation sequencing (WES and WGS), metabolomics, methylomics and mRNAseq technologies, and integrate the results with state-of-the-art bioinformatic and machine-learning approaches. Strong computational background with ability to use Unix/Linux, Perl or Python and R programming will be highly valued.

We hope to improve the diagnostic, identification and functional characterization of novel genes involved in motor-neuron diseases. Validation will require generation of zebrafish models using CRISPR/CAS9 technology. Pinpointing of drug targets using FDA-approved drug screenings in the zebrafish will ensue. Best candidates will be used in clinical trials in patients.

Self-motivated, enthusiastic individuals holding a MSc in **bioinformatics** or similar experience are encouraged to apply before the deadline of 15th of June. Only candidates with excellent academic records will be considered. Excellent English communication skills are required. Applicants should submit a single PDF file with cover letter, full CV, university scores and contact information of two references to Prof. Aurora Pujol and to Dr. Agatha Schlüter (E-mail: apujol@idibell.cat, aschluter@idibell.cat).