



## Master project 2024-2025

### Personal Information

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### Project

## Computational genomics

**Project Title:**

Transcriptomics of the synapse in model of cognitive disability

**Keywords:**

transcriptomics, proteomics, cognition, synaptic

**Summary:**

Cognitive disability may occur naturally during aging or derive from specific genetic alterations, as found in Fragile X syndrome (FXS) and Down syndrome (DS), two neurodevelopmental disorders with relevant alterations in synaptic plasticity. There are mouse models for normative aging and the genetic events in FXS and DS that allow the understanding of affected pathways and the search for novel therapeutic approaches. In the lab, we have described approaches to improve cognitive performance in FXS and DS models and we plan to use high throughput proteomic and transcriptomic analysis of synaptic content to reveal the effects that pharmacological treatments have in improving synaptic plasticity in the mouse models.

**Expected skills:**

R coding

**Possibility of funding:**

No

**Possible continuity with PhD:**

Yes