Universitat Pompeu Fabra Barcelona

Master in Bioinformatics for Health Sciences

Master project 2021-2022

Personal Information

Supervisor	Lorenzo Pasquali
Email	lorenzo.pasquali@upf.edu
Institution	UPF
Website	https://www.endoregulatorygenomics.org/
Group	Endocrine Regulatory Genomics

Project

Computational genomics

Project Title:

Genetics and regulatory genomics of glucose metabolism diseases

Keywords:

Regulatory genomics, pancreatic islets, diabetes, chromatin, regulatory functions

Summary:

In the present project we will characterize the dynamics of tissue-specific cis-regulatory networks in tissues central to the glucose metabolism. The project will include the analysis and integration of chromatin data such as open chromatin profiles (ATAC-seq), histone modifications (ChIP-seq), 3D chromatin structure (4C-seq/Hiseq) and transcriptomic maps (RNA-seq), with the aim of identifying unexplored paths in the context of the molecular mechanisms that maintain tissue-specific functions and cell fate.

References:

Ramos-Rodríguez et al. DOI: 10.1038/s41588-019-0524-6 Eizirik el al. doi: 10.1038/s41574-020-0355-7

Expected skills::

High motivation, team work, knowledge of R, experience with Unix operating systems, basic knowledge of regulatory genomics, expertise in statistical analysis.

Possibility of funding::

No

Possible continuity with PhD: :

To be discussed