Universitat Pompeu Fabra Barcelona | Master in Bioinformatics for Health Sciences

Master project 2021-2022

Personal Information

Supervisor	Núria López-Bigas
Email	nuria.lopez@irbbarcelona.org
Institution	IRB Barcelona
Website	bbglab.irbbarcelona.org
Group	Biomedical Genomics Group

Project

Computational genomics

Project Title:

Understanding cancer biology

Keywords:

Cancer drivers, selective advantage, mutational processes, tumorigenesis

Summary:

A tumor has between hundreds and thousands of mutations and only a few are directly involved in tumorigenesis, frequently called driver mutations. These mutations affect genes which when mutated confer the cell with a growth advantage with respect to its neighbors. Our lab has developed methods to identify these driver genes, and has analyzed tens of thousands of tumors, producing a catalog of the genes underlying tumorigenesis in the most frequent cancer types. Currently, we are interested in cataloguing the downstream effect that mutations affecting these driver genes have in different tumor types. While many mutations in driver genes are capable of driving tumorigenesis, some are not, and the range of driver mutations of a cancer gene varies between tumor types. Understanding the functional effect of driver mutations thus constitutes a key goal of cancer genomics research.

References:

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Expected skills::

Basic programming, data analysis and statistics skills. Willing to learn

Possibility of funding::

To be discussed

Possible continuity with PhD: :

To be discussed