Universitat Pompeu Fabra Barcelona | Master in Bioinformatics for Health Sciences

Master project 2020-2021

Personal Information

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Project

Computational genomics

Project Title:

Understanding how animals protect their DNA against UV light damage through the lens of comparative genomics

Keywords:

Comparative genomics; Phylogenomics; UV light-induced DNA damage repair; Nonmodel Organisms; Animals

Summary:

Almost 500 millions of years ago, several animal lineages conquered terrestrial environments from marine ones. One of the main challenges they needed to overcome was the protection of their DNA against UV light-induced damage, a threat that did not exist under water. Interestingly, we know almost nothing about how non-vertebrate animals repair their DNA after UV light-induced DNA damage. How do they do it? Do the different animals that conquered land (including nematodes, arthropods, earthworms or planarians, among other creatures) use the same mechanisms or different ones? This project aims at shedding light into the genomic underpinnings of UV light-induced DNA damage repair in non-model organisms through a comparative genomics spyglass.

Expected skills::

Python and/or perl programming. Knowledge on phylogenetics and comparative genomics desirable but not essential.

Possibility of funding::

No

Possible continuity with PhD: :

To be discussed