

# Murillo Fernando Rodrigues

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## Education

MS Genetics and Evolutionary Biology, University of São Paulo. 2016-present

BS Biological Sciences, University of São Paulo. 2012-2015

## Research Experience

Master's student, advised by [Prof. Rodrigo Cogni](#) and co-advised by [Prof. Maria Vibranovski](#).

University of São Paulo.

February 2016 - present

Research intern, [Cogni Lab](#). University of São Paulo.

July 2015 - January 2016

Research intern, [Reyda Lab](#). SUNY Oneonta

Research intern, [Marques Lab](#). University of São Paulo.

July 2013 - December 2014

## Funding

Research Internship Abroad, São Paulo Research Foundation.

August 2017 - February 2018

**Global patterns of natural variation in *Drosophila melanogaster*'s immune genes**

Master Fellowship, São Paulo Research Foundation.

November 2016 - July 2018

**Clinal variation in immune-related genes of *Drosophila melanogaster***

Selective pressures imposed by natural enemies may vary clinally, and the strongest pressure occurs in tropical regions. This spatial structure in selective forces may lead to the evolution of clines in polymorphisms related to resistance to natural enemies. The goal of this project is to investigate, with clinal variation, contemporaneous selection in genes of the *Drosophila melanogaster* immune system. Genomic data for natural populations distributed along a broad latitudinal transect was made available by previous studies; thus, it will be possible to examine the presence of clines in immune-related genes, comparing them to control genes without immune function.

Scientific Initiation Fellowship, São Paulo Research Foundation.

November 2013 - October 2014

**Diversity and phylogenetic positioning of freshwater lineages of *Rhinebothrium* Linton, 1890 (Eucestoda: RHINEBOTHRIIDEA) from lake Maracaibo and Orinoco basin, Venezuela**

The study of the phylogenetic relationships is essential to understand biological phenomena from an evolutionary standpoint. Host-parasite systems can be used as biological models for the study of historical associations. Neotropical stingrays and their parasites are an interesting model system because the biogeographical history of the host, that invaded the Neotropical freshwater environment, might have impacted the evolutionary history of its parasites. Several authors have studied the diversification of parasites of stingrays in South America. *Rhinebothrium* is genus of parasitic cestods of freshwater stingrays. The systematics of this genus was revised in 2011, but the authors of this study had no specimens from the region of Lake Maracaibo and Orinoco, which are essential for understanding the diversification of this group. This study aims to include specimens of these

regions in order to obtain a more complete picture of the composition of this genus. Nucleotide sequences of molecular markers (CO I, 28S, Calmodulin and ITS) along with morphological cohesion will be used to propose a phylogenetic hypothesis for freshwater lineages of the genus *Rhinebothrium*. The boundaries between species will be tested using the phylogenetic and morphological congruence with statistical support.

## Teaching and Instruction

Teaching Assistant, Molecular Ecology, University of São Paulo. 2017.

Teaching Assistant, Evolutionary Processes, University of São Paulo. 2016.

Instructor, Introduction to Biostatistics (Semana Temática da Biologia), University of São Paulo. October 2016.

Teaching Assistant, Introduction to Statistics and Probability, University of São Paulo. 2015.

Teaching Assistant, Principles of Systematics and Biogeography, University of São Paulo. 2013–2014.

## Conferences, Meetings and Workshops

8th Workshop on Cestode Systematics and Phylogeny, São Paulo.

## General skills

Evolutionary Genetics

Bioinformatics (R, Python, Perl and Bash)

Genomics

Phylogenetics

Statistics and Data Analysis (R and Excel)

## Languages

Portuguese (native)

English (fluent)

Spanish (proficient)