

PhD Position in Evolutionary Genetics / Adaptive Evolution

The laboratory of Molecular Phylogeny and Evolution in Vertebrates, leaded by Juan Montoya-Burgos, Department of Genetics and Evolution, University of Geneva, seeks for a PhD candidate with a strong interest in evolutionary biology and advanced knowledge in molecular techniques, gene expression analysis and/or DNA-sequence analyses.

RESEARCH PROJECT:

A significant part of the functional diversity of life on earth is thought to have evolved through multiple bursts of adaptive speciation. The process of adaptive evolution is therefore central in the field of evolutionary biology and the understanding of the genetic mechanisms underlying the evolution of adaptive traits remains a challenging task.

This project is aimed at investigating the evolution of genes that are involved in adaptive responses. The candidate will analyze the transcriptomes established in our laboratory to identify and characterize genes involved in the evolution of adaptive traits and to determine whether particular biological processes are enriched in positively selected genes. The candidate will establish correlations between the emergence of positively selected mutations and particular phenotypes. The role played by lineage-specific positively selected genes will also be assessed, in particular by the analysis of the expression pattern of non-annotated positively selected genes. To these aims, the candidate will participate in the development of new combinations of state-of-the-art techniques to obtain homologous DNA sequences of interest in a large panel of closely related species.

We will use as model organism the Loricariinae catfish subfamily as it is highly diversified in terms of morphology, ecology, behavior, and in number of species.

This project is founded by a Swiss National Science Foundation (SNSF) grant.

The Department of Genetics and Evolution hosts research groups working on regulation of vertebrate development (Denis Duboule), artificial and natural evolution (Michel Milinkovitch), molecular phylogeny of protists (Jan Pawlowski), developmental and molecular biology of sensory systems in mammals (Ivan Rodriguez), development and regeneration in Hydra (Brigitte Galliot), regulation of development in *Drosophila* (François Karch), sex determination and early development in *Drosophila* (Daniel Pauli).

Ideal candidates will have a Ms degree in biology with a specialization in evolution, developmental genetics, or phylogenetics, should be experienced in laboratory techniques (e.g. DNA, RNA extraction, PCR and RTPCR, DNA sequencing, cDNA library, cloning, In Situ Hybridization), with advanced skills in DNA sequence analysis and in gene expression analysis. The position is initially for three years. The selected candidate will be enrolled in the doctoral program Ecology & Evolution (<http://biologie.cuso.ch/ecologie-evolution/welcome>)

CLOSING DATE: Open until filled, but all application materials, including CV, a summary of research experience, copies of relevant published or in-press papers, and three reference persons should be received by **1st of September 2012** to ensure full consideration. The position will start at the earliest possible date. Candidates should indicate in a cover letter when they could take up the position.

Please send all application material to: Juan Montoya-Burgos, Dept. of Genetics & Evolution, University of Geneva, Sciences III, 30 quai Ernest Ansermet, 1211 Geneva 4, Switzerland; or as e-mail attachments to juan.montoya@unige.ch. For inquiries please contact juan.montoya@unige.ch.