

PhD student position by end of October, 2017

Adaptation and Constraint in the Evolution of Overlapping Genes

Background

Many overlapping genes (OLGs), where more than one protein product is encoded by the same genetic sequence in different reading frames, are present in viral genomes. Research on OLGs in bacteria is in its infancy and the evolution of overlapping genes is an enigma open to scientific investigation. The Overlapping Genes Group at the Chair of Microbial Ecology headed by Prof. Dr. Siegfried Scherer (<http://micbio.wzw.tum.de>) is active in both the experimental and theoretical analysis of overlapping gene pairs.

Job description

The proposed PhD project in theoretical evolutionary biology will begin to answer questions about the distribution and origin of overlapping gene pairs, based on taxonomy and the structure of the genetic code. Of particular interest is the examination of the evolution of overlapping gene pairs with respect to their origin and gain of function. Depending on the background of the candidate, the project will focus on either the deep phylogenies of different kinds of overlapping gene pairs, based on considering putative sequence and structural homology, or applying mathematical models of evolutionary constraint in different reading frames to testing evolutionary hypotheses of OLG origin and divergence

Your qualification

The ideal candidate will have an MSc with a background in either bioinformatics or mathematical biology and a very strong interest to pursue a PhD in evolutionary biology. Biologists with a background in molecular genetics, a strong interest in evolutionary biology and willingness to learn the use of bioinformatics tools will also be favourably considered. Experience with bioinformatics in R and a scripting language such as Perl or Python is advantageous.

Our offer

You will work in a world-class research institution with an international, multi-disciplinary, highly innovative, well-equipped and scientifically stimulating environment, offering further training and career development opportunities for PhD students. Salary is 50% of TV-L E13 for 3 years. Persons with disabilities will be preferred in case of equal qualification. TUM aims at a higher proportion of female scientists and welcomes applications from women.

Application

Please send your application as a single PDF including cover letter, CV, grades and references via email to Dr. Zachary Ardern (Zachary.ardern@tum.de) by September 11, 2017 at the latest.

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