

## Places offered

Two PhD positions available in theoretical evolutionary biology:

PhD position in the study of morphological and developmental variation

Universitat Autònoma de Barcelona

Dep of Genetics and Microbiology

We are looking for a student, preferably a biologist, to start a PhD in systems biology and evo-devo about:

-Gene network simulation in pattern formation, morphogenesis and morphological evolution.

One of the current challenges of evolutionary biology is to understand how genetic variation leads to specific morphological variation (the genotype-phenotype map) and how that process affects the direction of morphological change in evolution. Our group is devoted to address this question by using gene network models of pattern formation and morphogenesis in embryonic space. The idea, developed in previous work, is that morphological variation arises as variation in those developmental processes and that then by understanding those one can understand the which morphological variation is possible in each generation. The direction of morphological change in evolution is determined by both which morphological variation arises and which of this variation is filtered out by natural selection. Our goal is to understand this process by making in silico evolution of developmental gene networks able to produce pattern formation and morphogenesis (thus morphological variation). This will also be applied to study the evolution and development of specific mammalian and *Drosophila* organs.

Programming skills or a willingness to acquire them is required.

The grant is provided by the Spanish ministry of science and innovation (4 years).

For an outline of the groups research:

[http://bioinf3.uab.cat/grupgbe/index.php?option=com\\_content&task=view&id=64&Itemid=104](http://bioinf3.uab.cat/grupgbe/index.php?option=com_content&task=view&id=64&Itemid=104)

For further inquiries:

isaac.salazar@uab.cat

To apply send CV and a letter explaining the reasons why you may want to undertake a PhD in that or a similar topic

Genomics, Bioinformatics and Evolution Group

Article exemple: Salazar-Ciudad I, Jernvall J. A computational model of teeth and the developmental origins of morphological variation. *Nature*. 2010 Mar 25;464(7288):583-6.

The Autonomous University of Barcelona is a public university located 20 kms north of Barcelona centre. It has its own "green" campus.

PhD position in the study of morphological and developmental variation

Universitat Autònoma de Barcelona

Dep of Genetics and Microbiology

We are looking for a student, preferably a biologist, to start a PhD grant in the study of variation and evolution:

-The research will focus in analysis of the patterns of morphological variation in natural populations of different species. For that purpose 3D morphometrics and micro-CT scanning will be used. The project includes also the study of variation in development and between developmental stages.

Programming skills or a willingness to acquire them is required.

The grant is provided by the Spanish ministry of science and innovation for 4 years

For an outline of the group's research:

[http://bioinf3.uab.cat/grupgbe/index.php?option=com\\_content&task=view&id=64&Itemid=104](http://bioinf3.uab.cat/grupgbe/index.php?option=com_content&task=view&id=64&Itemid=104)

The rest of the group works in theoretical evo-devo or genomics

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