



## **Job Offer: PhD project in Comparative Metagenomics**

3 years, funded by the [INPhINIT](#) international program

### **Where**

[Computational Evolutionary Genomics](#) group at the [CBGP](#) research centre (Madrid, Spain)

### **About the Institute**

The Centre for Plant Genomics and Biotechnology (CBGP) is a joint (UPM-INIA) research institute of excellence located at the Montegancedo International Campus in Pozuelo de Alarcón, Madrid. Research activities at the CBGP are focused on plant biology and associated microorganisms. CBGP has relevant educational and training roles for Bachelor, Master and PhD students, and technicians, and has contributed to impulse the scientific carrier and leadership of young scientists.

The center has a main building of 7,200 m<sup>2</sup> with state of the art laboratories and scientific infrastructures, including metabolomics facilities, a high performance computational cluster, cell biology platforms and a P3-level containment lab.

### **Project Description**

We are looking for a motivated student to carry out a PhD on comparative metagenomics. The project will be fully computational and builds upon the recent developments on functional prediction and characterization of the unknown fraction of metagenomics data.

Although current approaches in comparative microbiome analysis have shown glimpses of differential patterns associated to disease states and ecosystem adaptation, it is largely acknowledged that the fraction of unknown data observed might carry crucial functional and taxonomic information that is by default neglected.

The main goal of this project is to implement the use of such vast collection of novel data, also known as metagenomics dark matter, into a comparative framework that enhances our ability to find differential signatures between hosts and ecosystems. The framework will be ideally tested on several novel metagenomic datasets from different sources, such as soil, ocean and plant microbiomes. Novel sequences will be also used to further explore microbial biodiversity in both the prokaryotic and eukaryotic kingdoms.

Results are expected to contribute to the global understanding of microbial communities, as well as in developing strategies for pathogen diagnosis and bioengineering. Access to data is granted through ongoing collaborations with research groups at ETHZ (Sunagawa lab) and EMBL (Bork group). Additional soil metagenomics sequencing is planned in collaboration with other experimental groups at CBGP.

**Requirements:**

- Fulfill the INPhINIT program mobility requirements
- Degree in Biology, Biotechnology or similar disciplines
- Training in bioinformatics and data analysis (i.e. Python scripting, R analysis, Linux terminal)
- Fluent in English

**Recommended additional skills:**

- Knowledge in Evolutionary Biology, Microbiology or related topics
- Previous experience handling genomic or metagenomic datasets
- Experience or training working with HPC systems and big data

**Contract details:** 3 years with a competitive salary package via INPhINIT program

**Deadline for applications:** Feb 1st, 2018

**Estimated starting date:** ~Sept 2018

**Application process:**

1. Send CV, motivation letter and, if possible, contact details of two referees to [huerta@embl.de](mailto:huerta@embl.de) before the official deadline
2. Submit application via the INPhINIT website <https://obrasocialacaixa.org/de/investigacion-y-becas/programa-de-becas-de-posgrado/inphinit/call-for-application>

**Group info:** <http://compgenomics.org>



"la Caixa" Foundation



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