



Vrije  
Universiteit  
Brussel



UNIVERSITÉ  
LIBRE  
DE BRUXELLES



## PhD vacancy in systems biology at ULB/VUB ULB-VUB Interuniversity Institute of Bioinformatics in Brussels (IB)<sup>2</sup>

### Topic: dynamical modeling of microbial communities

#### Description:

The project consists in developing, parameterizing and benchmarking a dynamic microbial community model and to apply this model to perturb microbial communities *in silico*. The focus will initially lie on small-scale systems containing a few interacting microbial species. Such an approach will allow for a detailed analysis of the dynamical behavior of the system when perturbed. Model parameters and community dynamics are to be compared to experimental data that will become available during the project. Afterwards these results will be generalized to large-scale communities. Such studies may prove relevant in a clinical context as microbial communities are known to play a role in several diseases.

This interdisciplinary PhD position is embedded in the newly created Interuniversity Bioinformatics Institute in Brussels (IB<sup>2</sup>, <http://ibsquare.be/>). The PhD will be carried out in the Computational Biology lab (D. Gonze, ULB) and the Applied Physics lab (J. Danckaert, VUB). A 1-year grant is guaranteed and — for successful candidates— most likely to be completed by a FRIA/FWO grant (upon application) or an internal lab grant for 3 more years.

#### Required skills:

The candidate should have passed at least 120 ECTS of an official degree in Science or Bio-engineering, obtaining a minimum average qualification of 7/10 (or at least 70% of the maximum grade). Furthermore, the candidate should have:

- a good background or strong interest in nonlinear dynamics, statistics, etc.
- an interest in microbiology and systems biology
- basic programming skills
- knowledge of R, C, Matlab or XPP is an asset
- previous experience in modeling of dynamical systems is an asset
- be fluent in written and spoken English
- be motivated and able to work independently in an interdisciplinary team.

#### Contact:

##### Didier Gonze

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This call closes Sept. 30, 2013, or earlier, if a suitable candidate has been found.