



Postdoctoral position in Computational Systems biology/Bioengineering: Computational Approaches to Metabolic Flux Regulation in Microbial Ecosystems, f/m

For 1,0 fte

Vacancy number 1.2008.00182

The department of Molecular Cell Physiology at the Faculty Earth and Life Sciences, VU University Amsterdam, offers a postdoctoral position in the NWO-funded Computational Life Sciences project "*Microbial ecosystems and multiple environment stoichiometric analyses (MEMESA)*". The research will be carried out at the Centre for Mathematics and Computer Science (CWI; Amsterdam) and at the VU University Amsterdam.

Project

The NWO Computational Life Sciences program funds research of biological systems using theoretical and modelling approaches. The MEMESA project will use computational methods (flux balance analysis, metabolic modelling) to study the regulation of prokaryotic metabolic networks in relation to environmental conditions and the presence of other micro organisms in microbial ecosystems.

Task description

You will develop theoretical approaches to establish optimal metabolic flux distributions (using mixed-integer linear programming techniques with flux balance analysis; FBA) for micro organisms that function in dynamic microbial ecosystems. Multiple optimization criteria will be applied; at the organism (intracellular) and ecosystem level (intercellular). You will study the plasticity of metabolic networks as function of different environments by considering optimal regulation strategies. This will require development of theoretical flux analyses approaches to deal with partially-characterized microbial ecosystems. To do so, FBA will be merged with coarse-grained metabolic network descriptions. You will work in an interdisciplinary team consisting of two biologists and one mathematician as supervisors, one PhD student and one postdoc (programmer). You will work closely with the PhD student, the tasks will be divided based on your experience and interests, and those of the PhD student.

Requirements

We are looking for an enthusiastic, motivated person with a PhD in bioengineering, bioprocess technology, biophysics, biomathematics, computational biology or systems biology, with experience in computer modelling and linear algebra. Preferably the applicant will be familiar with basic microbial physiology, regulation of microbial metabolism and flux balance analysis. You should be able to function in a multidisciplinary environment.

Details

The appointment will be full time for the duration of 2 years, starting 1 November 2008 at the latest. Our fringe benefits of employment can be found at www.vu.nl/vacatures.

Salary

Depending on qualifications and experience, minimum €3.129.- and maximum €4.284.- gross per month (salary scale 11), based on a full-time employment.

Information and application

For further information, please consult Dr. F.J Bruggeman (e-mail: frank.bruggeman@falw.vu.nl).

Please sent your cover letter and Curriculum Vitae, citing the vacancy-number, before July 21, 2008 to the VU University Amsterdam, Faculty Earth and Life Sciences, attn. Dr. J.M.R.M. Neutelings, directeur bedrijfsvoering, De Boelelaan 1085, 1081 HV Amsterdam, or per e-mail: falw-vacatures@falw.vu.nl.

Any other correspondence in response to this advertisement will not be dealt with.