



Research Associate - Metabolic Modeling for Antibiotics Research

A research associate position at postdoctoral level, focusing on metabolic modelling and analysis is - subject to budgetary regulations - available in the Systems Biology Research Group at the University of Rostock for duration of 3 years (start expected for autumn 2015). The salary is according to the German University payment scheme (E13).

As part of an [ERASysApp](#) consortium, which investigates actinomycetes in natural product formation, the project studies cellular processes and metabolic capacities for bioproduction purposes, using a systems biology approach.

Project summary:

Despite an increasing medical need, the number of new antibiotics approved for human use has been declining over many years. Recently, new molecular genetics and biochemical tools, and in particular Next Generation Sequencing, combined with newly developed bioinformatics approaches, have provided insight into the enormous unexploited genetic pool of environmental microbial biodiversities for the synthesis of potential new bioactive compounds.

The main objective of the SYSTERACT project is through an integrated and interdisciplinary approach to develop the model actinomycete *Streptomyces coelicolor* into a 'Superhost' for the efficient heterologous production of bioactive compounds, enabling a faster discovery of new antibiotics from environmental microbial resources (microbial strains and metagenomes). Central to this approach will be an iterative Systems Biology process, combining microbiology, genetics, biochemistry, and fermentation technology with modelling.

SYSTERACT brings together six partners from four ERASysApp member countries, including four universities, one non-profit research organization, as well as the latter's Technology Transfer Unit.

Major task:

The candidate will be responsible for model development and integrative data analysis. Different methods for data analysis will be used, in particular for identification of flux controlling reactions using a combination of model simulations and transcriptome data. The task is to enrich the pure stoichiometric representations of the GEMs with kinetic and regulatory information, and to generate dynamic FBA simulations.

Desired qualifications:

The candidate should have experience with metabolic modelling and the approaches referred to above. Excellent communication skills and experience with interdisciplinary and international research collaborations are important.

How to apply:

Interested candidates should send their CV and documents in pdf-format to:

olaf.wolkenhauer@uni-rostock.de