1 Research Grant – Post-doc (BI-D)

We are seeking one postdoc candidate in the context of a FP7 KBBE European Project, ***BacHBerry - "BACterial Hosts for production of Bioactive phenolics from bERRY fruits***, www.bachberry.eu (European Union FP7- 613793).

Scientific Area: Optimization and Operations Research

Required education Level and research experience: PhD in one of the following areas: optimization, operations research, machine learning, computer science, mathematics, statistics or related, with a taste for inter-disciplinary research, and with very good interpersonal skills. Ideally, the person will have a long experience with optimization techniques, machine learning and graphical models.

Workplan: With the development of genetic and metabolic engineering is it now possible to increase the cells' production of given substances by manipulating the corresponding metabolic networks, which can be defined as hypergraphs (nodes are compounds, edges are chemical reactions). BachBerry is interested in the generation of bacterial platforms for sustainable bio-based production of phenolic compounds found in berry fruits. This is accomplished by maximizing the fluxes in the network, a problem similar to those occurring in transportation and logistics optimization. The candidate will work on the development and application of optimization methods and algorithms, in particular expanding techniques based on linear programming (FBA), bi-level mixed-integer (OptKnock) and multi-level optimization (OptCom). Also sparse optimization might provide relevant solutions and will be explored during the project.

Workplace and scientific supervision: The candidate will work in the Center of Intelligent Systems at the IDMEC (http://www.idmec.ist.utl.pt/), Instituto Superior Técnico, Lisboa, Portugal, under the supervision of Susana Vinga and in interaction with the partners of BacHBerry, in particular the ERABLE team at the Inria-UCBL in Lyon, France (https://team.inria.fr/erable/) and Marie-France Sagot. Both CSI and ERABLE are methodological teams with an expertise in computational and systems biology.

Duration: 12 months, from September 2015, and renewable for up to the duration of the project.

Application Dates: From 3rd June to 27th July 2015

Documents to be submitted: Detailed curriculum vitae; motivation letter; copy of academic study certificates; name of two personal references. The applications should be submitted via email to bachberry.wp8@gmail.com

For more details: http://web.ist.utl.pt/susanavinga/