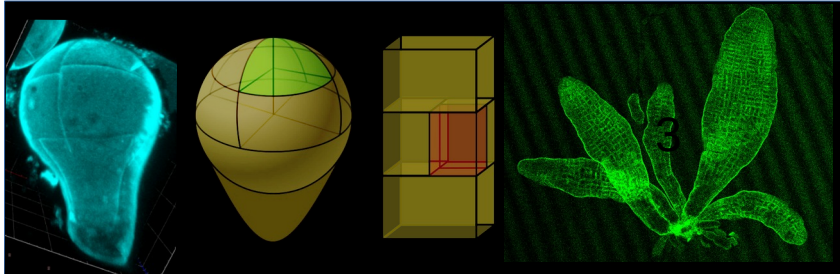# ERC-funded post-doc position in computer sciences

3D modelling of changes in cell division orientation in brown algae

Location: Institute of functional genomics in Lyon (IGFL), ENS de Lyon, 69007 Lyon, France.
http://igfl.ens-lyon.fr/igfl/presentation-igfl?set_language=en&cl=en
Team: Morphogenesis of brown algae: http://igfl.ens-lyon.fr/equipes/b.-charrier-morphogenese-des-algues-brunes
Supervision: Bénédicte Charrier (team leader); benedicte.charrier@cnrs.fr
Duration: 24 months - possibility to extend to 36 months
Salary: between 27 k€ and 39 k€ net (including health and unemployment insurance) depending on experience (0 to 7 years' post-doctoral experience; based on standard CNRS salaries).
Deadline: Applications will be reviewed on a rolling basis until the position is filled.

General aim:
The overall aim of the ERC "ALTER e-GROW" project is to identify the factors that control the change in the orientation of cell divisions during the development of brown algal embryos. It is based on 3D mapping of the geometry and topology of cells and intracellular components during the development of four brown algae, all specific to these marine multicellular organisms. The aim is to build and validate force-driven physical models of cell growth and division by simulating *in silico* how the interplay between cell 3D geometry, cell components and cell-cell interactions determine changes in the orientation of cell division. The models are intended to reflect the dynamics of the system as observed by the experimentalists of the team.
Previous modelling work of the team: https://doi.org/10.1371/journal.pbio.2005258;
https://www.youtube.com/watch?v=w9agWqAX6vM; http://dx.doi.org/10.1098/rsif.2016.0596;
https://doi.org/10.1071/FP08036; https://doi.org/10.1105/tpc.110.081919

Skills:
She/he will have experience as a scientific software developer, with interest in 3D mechanical simulation as a tool to apprehend cellular processes. The project requires an advanced knowledge in cell and/or developmental biology. In the team, she/he will work in constant interaction with experimentalists, tightly involved in the conception and evaluation of the models. As the majority of data comes from microscope observations, and the output is expected to consist in part of simulation images, skills in image processing and computer graphics will be a plus.

How to apply :
Interested candidates should submit a single PDF file containing a cover letter with a brief statement of research interests and career goals, a curriculum vitae, and contact information for up to three references to benedicte.charrier@cnrs.fr. Please include "Post-Doc 3D Modelling Brown Algae" in the subject line of the email.