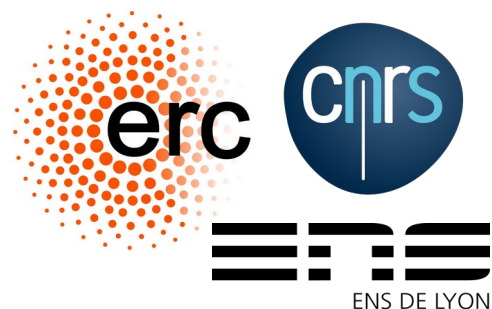


Job announcement

A 3-year post-doctoral position is open in the team “Morphogenesis of Macroalgae (MMA)”, at the Institute for Functional Genomics of Lyon (IGFL, ENS-Lyon, France) in the frame of the ERC-Adv project “ALTER e-GROW” (2023-2028).



General topic of the 5-year ERC project « ALTER e-GROW »:

The overall aim of the project is to identify the factors that control the change in the orientation of cell division during the development of brown algal embryos. The project begins with the quantitative 3D mapping of cellular factors such as cell shape, cell mechanics and intracellular components during 3D tissue formation in the embryos of four brown algae, and this is the aim of this post-doctoral contract. The cellular data will then be used to simulate changes in the orientation of cell division in the tissues of brown algae, as a function of the mechanical forces at play (simulation work done by other members of the team). More here (<https://www.sb-roscoff.fr/en/team-morphogenesis-macroalgae-mma/erc-project-alter-e-grow-2023-2028>).

Objective of the 3-year post-doctoral position :

The objective is to map cellular parameters like cell shape, cell mechanics factors (e.g. cell wall organisation) and intracellular components (e.g. nucleus, microtubules, actin filaments, centrosomes, molecular motors) during the formation of 3D tissues in brown algae embryos. Technically, the work involves *in vitro* cultivation of algal material (under sterile conditions), production of algal embryos, inoculation in microfluidic chips, embryo labelling with vital stains, chemical treatments, laser ablation and microinjection. The algae will then be monitored for several days under living conditions using accurate cellular imaging techniques involving confocal, two-photon and light sheet optical microscopy, followed by quantitative image analysis.

The ideal candidate:

She/he will have a developmental biology background and interest in tissue patterning and mechanobiology. She/he will have a PhD and potentially some post-doctoral experience with a significant background in confocal microscopy of living multicellular organisms. She/he will be familiar with quantitative imaging approaches and analyses. She/he will preferably have experience with non conventional multicellular models (either algal, plant, fungi or metazoans) and will be used to the concept of managing their life cycle in the lab. Overall, as the project is technically challenging, the candidate should be equipped with a high degree of autonomy, initiative and a pronounced taste for exploring and developing new methods, in addition to a boundless curiosity.

The host team and group leader

The "Morphogenesis of macroalgae" group focuses on understanding the morphogenesis of brown algae, with a strong appetite for mechanical modelling approaches, which are themselves hungry for quantitative cell biology data. Therefore, to feed the model, the team has recently developed functional imaging tools including time-lapse microscopy,

microfluidics (doi: 10.3389/fmars.2021) and laser ablation (doi:10.3791/63518) to monitor the development of algal embryos. All facilities for microscopy, image analysis and algal culture and handling are provided on site. In the past 15 years, PI Bénédicte Charrier has gambled on brown algae as unique organisms with an original evolutionary trajectory independent from plants and animals to identify novel mechanisms of multicellular development, e.g. in doi.org/10.1371/journal.pbio.2005258, DOI: 10.1101/2021.08.28.458042, doi: 10.1016/j.cub.2019.09.021, doi:10.1105/tpc.110.081919.

The team will be moving from the Roscoff Biological Station to the IGFL on 1 September 2023.

The institute:

The Institute of Functional Genomics of Lyon (IGFL; <http://igfl.ens-lyon.fr/igfl/presentation-igfl>), based on the campus of the Ecole Normale Supérieure de Lyon (ENS-Lyon) devotes all its energy in the study of the evolution of developmental and physiological mechanisms with a strong focus on integrative, organism-level research using a diversity of model and non-model organisms.

The unit is composed of research teams sharing a common vision of science and interest for integrative and multi-disciplinary experimental approaches, among which bioinformatics /comparative biology/ genetics/ epigenetics/ genomics/ biochemistry/ imaging/ modelling, empowered by scientists with diverse profiles and expertise (geneticists, genomicists, developmental biologists, cell biologists, molecular biologists, evolutionary biologists, paleobiologists, physiologists, biochemists, computational biologists, physicists, modelers and bioinformaticians). This multi-disciplinary diversity makes the IGFL a unique and attractive research environment.

Annual salary :

Annual salary is between 27 k€ and 39 k€ net (including health and unemployment insurance) depending on experience (from 0 to 7 years of post-doctoral experience).

How to apply :

Please send to benedicte.charrier@cnrs.fr (indicate topic « post-doc application ») a 2-page CV and a 1-2 page letter describing your current or past research projects in developmental biology, highlighting your experience in imaging, and microinjection if applicable, as well as your motivation for this position. Please include your publication list (all, even papers in preparation), your two most significant publications (PDF ; not necessarily those with the highest impact factor; will remain confidential if in preparation papers) and at least 2 reference contacts.

Schedule of selection :

- Deadline for application : 12 July 2023
- Selection for interview : 14 July 2023
- Interview : 21 July 2023.
- Final selection : 21 July 2023.
- Start of contract : 1 October-1 November 2023 (depending on the availability of the person selected and the CNRS hiring procedure).