



## The CEA recruits a Scientist in “The crosstalk between the plant and its associated microbiota under drought stress”

**A permanent scientist position is open in the team Microbial Ecology of the Rhizosphere (LEMIRE) within the BIAM institute located in the Cadarache centre, Southern France (Provence).**

**The scientist will initiate projects on the response of plants to their associated microbiota, particularly under stressful conditions, and on deciphering the molecular dialogue of plants with their associated phytobeneficial bacteria.**

### Mission and activities of the host team

You will benefit from the expertise of the host team (<https://www.cite-des-energies.fr/biam/recherche/lemire/>) and from the environment of the BIAM institute, CEA and Aix-Marseille University (<https://www.cite-des-energies.fr/biam/plateformes-technologiques/>).

The "LEMIRE" team is composed of 3 scientists, 3 engineers, 1 technician and usually hosts 5 to 8 PhD students and postdocs. The team hosts two engineers with an expertise in bioinformatics.

Plants have co-evolved with their microbiota for more than 300 million years. The whole genome of this microbiota (microbiome) constitutes an extension of the host plant genome (holobiont). The interactions between the host and its microbiota rely on sophisticated ways to communicate and coexist. Complex and interconnected networks of signals and metabolites modulate plant-microbiota and microbe-microbe communication pathways to regulate these interactions.

Research activities at LEMIRE are devoted to the study of "soil-plant-microbiota" interactions, with a particular focus on the role of host-associated microbiota in mediating interactions between the host and its biotic/abiotic environment and on the adaptive strategies of bacteria to their host plant and to their environment.



The team's recent work has demonstrated that i) root exudates shape the structure, functions and interaction networks of the plant-associated microbiota; ii) the phytobeneficial characteristics of rhizobacteria are under the control of multiple molecular dialogues; and iii) the amplification of sRNAs and the preservation of multiple active copies indicate the importance of this post-transcriptional regulation in the adaptive response of *Pseudomonas brassicacearum* to environmental constraints ([publications](#))

We aim to gain a better fundamental understanding of the regulatory mechanisms of plant-bacteria interactions under stress conditions, and how phytobeneficial bacteria modulate the gene regulatory networks by which plants regulate their growth in response to drought stress. The knowledge gained could be extrapolated to crops to develop sustainable solutions for agriculture in the context of global climate change.

## Requirement

The position is open to candidates with a PhD and at least 1 postdoctoral experience. Candidates should have an expertise in signal transduction and the molecular communication mechanisms between plants and microorganisms. Special interest is given to researchers with expertise on how plants induce tolerance to abiotic or biotic stress. More specifically, expertise in plant genomics, OMICs, metadata analysis, as well as notions in plant physiology are required. Experience in imaging plant-microorganism interactions would be a plus.

The ability to interact with other researchers in the team and to work as a team is very important. The person recruited will also be expected to write grant proposals and scientific publications and will therefore also need good oral communication and writing skills. He/she will also have to supervise master students, PhD students or post-docs.

A good command of English is essential. French is not necessary in the laboratory but its learning will be recommended to facilitate the insertion in the social life.



## Application procedure

Please **send your application file** at [cite-des-energies@cea.fr](mailto:cite-des-energies@cea.fr), including:

- A cover letter
- Your recent CV including a list of publications
- Major achievements/research contributions (2-4 pages) and general outlines of the proposal (about 1 page). **The whole document (Arial 12, single space, all margins 2 cm) must not exceed 5 pages.**
- 2-3 letters of recommendation.

Please, submit your application as a single pdf file and name the file with your last name first and the name of team (LEMIRE), *e.g.* DUPONT\_application\_LEMIRE.pdf.

**The deadline to apply is April 19, 2022 11:00 p.m. CET.**

Shortlisted candidates will be invited to discuss with the host team and propose a 3-year research project (3-5-pages). Interviews of candidates will be held as of June 2022 for a position in the fall of 2022.

## CEA's life quality

Expected salary range at the beginning: net salary from 2620€/month to 3100€/month for 1 to 6 years of postdoctoral experience.

Social benefit: 52 days of annual paid holidays; retirement plan; French national social security for health and retirement, free school system and international school for foreign children.

For scientific questions, please contact: Wafa Achouak [wafa.achouak@cea.fr](mailto:wafa.achouak@cea.fr)