Institute for Plant Sciences of Montpellier
UMR CNRS / INRAE / Institut Agro / UM

Recruitment profile for a Professor at the University of Montpellier within the Montpellier Institute of Plant Science (IPSiM)

"Physiological adaptation of plants in response to their environment."

RESEARCH

In the current context of climate change and agroecological requirements, a major scientific challenge is to identify and understand the molecular processes by which plants cope with environmental constraints. Research conducted at IPSiM focuses on identifying and characterizing the factors involved in regulating plant hydromineral nutrition, depending on environmental constraints (e.g., atmospheric CO_2 concentration, temperature, microbiota).

The main functions currently being studied are the adaptive responses of root architecture and functions to the environment, the regulation of gas exchange between leaves and the atmosphere, and the maintenance of the plant's hydromineral status. Much of this research focuses on the role, properties and regulation of nutrient and water transport systems, which can also be studied as prime targets for environmental and hormonal signaling pathways.

The candidate is expected to build on approaches related to their expertise in order to develop an original research program, while joining one of the potential host teams (i.e., Honude, Influx, Sirene, Plasticity, MeMo or FeROS). The candidate may, for example, be interested in the topics being studied by these teams, such as the identification of new transport systems, the role of redox signaling or transcriptional networks in mineral nutrition, the interaction between nutrition and hormones, the role of root exudates in biotic interactions, the plasticity of root development, or the regulation of stomatal function.

The candidate is expected to develop integrative approaches that enable a dynamic, multi-scale understanding of the above-described functions, from the molecular and cellular characterization of transport systems or associated signaling pathways to physiological and developmental effects. State-of-the-art tools available in the laboratory (e.g., elemental analysis, isotopic analysis, climatic chambers, electrophysiology, imaging, root phenotyping, proteomics) may be used for this purpose, or developed by the candidate. This research may be conducted on the model plant Arabidopsis or, if more relevant, on other species studied at IPSiM (e.g., white lupin, rice, maize).

Through its research work, the candidate will contribute to enhancing the academic visibility of the unit, while opening up opportunities for collaboration, particularly at the international level.

TEACHING:

The recruited professor will be assigned to the “Biology-Mechanisms of Life (Bio-MV)” department of the Faculty of Science (University of Montpellier).

He/she will join the teaching team focused on Plant Biology and Integrative Physiology (development/mineral and carbon nutrition/genetics and improvement/interactions with the biotic and abiotic environment), which includes five professors and six lecturers. He/she will contribute to strengthening teaching capacities in plant biology and physiology.

He/she will contribute his/her expertise in the field of plant responses to environmental stresses (whether biotic or abiotic) at various levels, ranging from molecular mechanisms within the cell to the cultivated population in the field.

At Bachelor's level, he/she will be involved in particular in the degree of “Life Sciences in Biology-Mechanisms of Life” as well as in the professional Bachelor's degree in Agronomy “EVAPPMT”.

At Master's level, he/she will teach plant biology courses in the “Biology-Agrosciences program, where he/she will also be able to contribute his/her expertise in integrative approaches from the cellular level to that of the whole plant.

The recruitment schedule will enable the successful candidate to participate in the implementation of the LMD6 program at the University of Montpellier. Particular attention will be paid to the ability to develop innovative teaching approaches in line with the policy of the department and the institution. Given the nature of some of the student population, the ability to teach in English is required.

In the medium term, he/she will be expected to take charge of the management and coordination of a plant biology track (master's or bachelor's degree) and, in particular, to be involved in the coordination/establishment of regional or international partnerships between institutions concerning training in plant physiology (bachelor's and master's degrees).