

## **Lecturer in Animal Physiology**

**Establishment: L'institut Agro Rennes-Angers**

**Discipline: Livestock production and sciences**

**CNECA n°6**

**Session 1**

**N° RenoiRH: A2ACO00064**

### **Working environment**

Since 1 January 2020 and the merger with Institut Agro Montpellier, INSTITUT AGRO RENNES-ANGERS (the national school of agronomic, agri-food, horticultural and landscape sciences) is part of Institut Agro (French Higher Education Institution in Agriculture, Food, Horticultural and Landscape Sciences), a new establishment for agriculture, food and the environment under the authority of the French Ministry of Agriculture.

The INSTITUT AGRO RENNES-ANGERS is located in the midst of Europe's leading agricultural and food-processing region and located across two campuses in Rennes and Angers. It has a team of 130 teacher-researchers providing expertise to 2,000 students enrolled in four engineering courses and other courses ranging from bachelor's degree to doctorate (115 PhD candidates, co-accreditation in four doctoral schools). INSTITUT AGRO RENNES-ANGERS conducts academic and applied research projects in close partnership with INRAE and transfer and development activities with three competitive clusters (Mer Bretagne, Végépolys, Valorial).

The Lecturer will work towards the institution's objectives and will be part of the Animal Science Teaching Unit (UP SPA) of the Animal Production, Agri-Food and Nutrition Department (P3AN) in Rennes.

### **Background and reason for the position**

Livestock farming is a major factor in the sustainable development of regions and food systems, helping to feed people and providing numerous ecosystem services (jobs, preservation of landscapes and the social fabric in rural areas, recycling of by-products from food industry, etc.). Livestock farming systems also face many challenges related to climate change, competitiveness, qualities of animal products, environmental rejects, animal health and welfare, working conditions for farmers and controversial social issues. Livestock farming is a dynamic sector going through agro-ecological and social transitions. This leads to a high employment rate for our young graduates, the emergence of numerous innovative practices to meet these challenges, and the development of technologies to monitor animals and their environment (sensors and phenotyping). Supporting these transitions requires a broad and comprehensive view of the animal in its environment, combining detailed physiological approaches with broader zootechnical approaches, as well as advanced technology (sensors, data analysis, etc.). This integrative approach is essential to assess the various animal performance responses to new practices and management, as well as to unforeseen events (e.g. climatic or health issues). Understanding these responses involves analysing the physiological trajectories of animals in a variety of farming environments and identifying the potential risks of physiological disruptions, which can have

a variety of implications such as altering animal performance, efficiency, welfare and health. Understanding and detecting these breakpoints is important and essential to integrated management of animal performance and health and to the design of more efficient systems from the point of view of the environment, health and welfare as well as resource management. This is one of the mainstays of the agro-ecological transition in livestock farming, which is based on the One Health-One Welfare concept.

The role is part of a particularly rich research-training-innovation partnership (UMT RIEL and DigiPorc, Laboratoire d'Innovation Territoriale (LIT) Ouesterel, Institut Carnot France Futur Elevage, etc.), which provides a fitting framework for developing collaborations.

This position of Lecturer is key to adapting the education of future professionals to changes in the livestock sector, based on strong partnerships.

### **Teaching activities**

The Lecturer will support student learning in Animal Sciences and Production in the agronomy engineering course (common syllabus and specialisation in Animal Sciences) and in the agri-food engineering course and will reinforce teaching in the Biology and Agrosocieties Master's degree course in Animal Sciences (SAED).

They should be able to help students to develop knowledge and skills in animal physiology, including the interactions between productive (reproduction, growth and lactation) and non-productive (health, thermoregulation) functions. They will be involved in courses in animal science and production (lectures, seminars, labs and projects), particularly those dealing with health management and the development of health safety in livestock farming in conjunction with biosecurity concepts. The successful candidate will also be responsible for teaching about the tools and methods used to understand, measure, and model the physiological state of animals in response to environmental changes that may create disruptions in their performance trajectory and compromise the balance between production, health and well-being of the animal. They will also discuss innovative methods of investigating animal physiology as an alternative to the use of live animals for research. In partnership with other lecturers from INSTITUT AGRO RENNES-ANGERS, they will help to manage multidisciplinary projects aimed at developing cross-disciplinary skills and integrating knowledge at farm level, to understand the issues and challenges of livestock farming, and propose management strategies that could potentially mark a break with current systems.

The appointed Lecturer will benefit from the team dynamic to develop innovative teaching and learning methods as well as research-training-innovation links and will help to consolidate them. They should be able to teach all or part of their course in English.

### **Research activities**

The Lecturer will be part of the UMR PEGASE Physiology, Environment, Livestock Genetics and Farming Systems (INRAE-L'Institut Agro). Their research will be included in the work of the INRAE PHASE department, more specifically in the "Animal" field, to address challenge 2 "Models and tools to anticipate and manage processes in livestock farming". They will be part of a team dedicated to providing knowledge and developing innovative approaches to animal husbandry in pig and dairy systems. The main challenges of their research will be to identify relevant criteria for monitoring the physiological trajectories of animals and to model them so that they can be integrated into decision-making tools. They will focus on indicators of physiological and health impairment.

Their research will combine experimental approaches in a controlled environment (and alternative methods), livestock data acquisition and data analysis (statistics and modelling) from the phenotyping of animals and the characterisation of their environment.

The UMR PEGASE is able to offer the successful candidate a high quality scientific and technical environment, in which they should be able to carry out a professional thesis to supervise research (HDR) within 5 to 10 years.

### **Application**

Candidates should hold a PhD (or equivalent) and have a strong background in animal or veterinary sciences. They will need good knowledge in animal physiology and farming, at least of one species of zootechnical interest (domestic ruminants, pigs or poultry), with a readiness to extend this knowledge to other animal species. These skills will be applied to a variety of farming systems: specialised, mixed farming, intensive and extensive, etc. Statistical and/or modelling skills are required. Good English and French language skills and teaching experience would be an advantage.

Candidates should also have a strong motivation to work in a multidisciplinary team.

### **For further information**

- About teaching and research: Professor Lucile Montagne, [lucile.montagne@agrocampus-ouest.fr](mailto:lucile.montagne@agrocampus-ouest.fr)
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