Erasmus+ Traineeship

EMPLOYER INFORMATION	
Name of Organization	University of Murcia
UMU Contact Person and e-mail	José Luis Ferran, jlferran@um.es
UMU Address	Facultad de Medicina, Campus Ciencias de la Salud, Edificio LAIB, IMIB-Arrixaca.
UMU Telephone	868884340

ENTERPRISE JOB DESCRIPTION	
Name of enterprise	At University of Murcia (UMU): Functional Genoarchitectur Groupo (Neurobiology of physical Activity and comparative neuroanatomical studies). At the Biomedical Research Institute of Murcia (IMIB-Virgen de la Arrixaca): Brain regionalization and developmental genes group
Duration	From 3 to 12 months
Working Hours	Around 30 h/week

Project Description	***Currently we are centered on understanding the neural mechanism of resistance to fatigue and metabolic changes derived from physical activity in the brain of rodents***. Our aims with financial support include studies in rats trying to understand the dopaminergic effect in the resistance to fatigue during initial training programs in a forced running wheel system. **This line that we call "motor"**, pretends to understand how tegmental ventral area, striatum or prefrontal cortex modify or affect the motor behavior. In the way to understand this line we are using forced running systems, systemic agonist and antagonist dopaminergic injections and cannula infusion experiments to produce striatal or prefrontal cortex activation (by stereotaxic surgery). Another important line in course with financial support pretends to understand ***the neural mechanisms that lead to a decrease in adipose tissue content after a forced physical activity program.*** In this line that we call "**metabolic**" we explore the adipose tissue content in rats determined by computer tomography and we are analyzing the response of brain regions by qPCR, and we are in a way to start to work with DREADDS or Optogentic responses. For this kind of experiments, we are using metabolic cages. Other techniques usually developed in the laboratory to answer question related to this topic imply immunohistochemistry, in situ hybridization and cloning of genes between others.
Tasks of the Erasmus intern	According to the skills and independence in the bench, the student will participate in rodent training programs, qPCR studies, in situ hybridization or immunohistochemistry to determine the metabolic or motor effects of the training programs.
Requirements	The applicant must have a minimum of laboratory experience. Students of biology, medicine, biomedicine, biochemistry, pharmacy, veterinary or sports science are welcome. However, a motivated student with minimal experience working on a laboratory bench can be accepted.

What do we offer	The student will be part of our currently active studies in a project supported by national competitive funding. Experience will be guaranteed by our modern research facilities and by friendly and highly qualified teamwork with highly competent PhD students and post-doctoral researchers, under the close supervision and guidance of senior staff. We organize our activities in a friendly and collaborative environment, guaranteeing possibilities to increase your skills during the experience. He / she will gain experience in rodent training programs and associated behavioral tests. Associated with these training programs, basic molecular / cell biology techniques can be developed, as well as more specialized techniques such as qPCR, in situ hybridization, immunofluorescence / IHC, microscopy, computed tomography studies and other studies that involve analysis of brain, fat and muscle tissues.
Website	AT UMU: https://curie.um.es/curie/catalogo-ficha.du?seof_codigo=1&perf_codigo=10&cods=E0A3*08 At IMIB-Virgen de la Arrixaca: http://puelles.imib.es/grupoinvestigacion/miembros.jsf