Job Description: Estación Biológica de Doñana (EBD)

Role: Research Assistant
Start Month: January 2020
Duration: 3 months
Website: www.ebd.csic.es

Location:
Estación Biológica de Doñana CSIC (EBD)
C/ Americo Vespucio, s/n,
41092, Isla de la Cartuja,
Sevilla

Company Description:
Doñana Biological Station is a public research institute belonging to the Consejo Superior de Investigaciones Científicas, CSIC, within the area of Natural Resources. Our primary mission is to carry out multidisciplinary research at the highest level, directed at understanding, from an evolutionary point of view, how biodiversity is generated, how it is maintained and damaged, in addition to the consequences of its loss and the chances of their preservation and restoration.

Furthermore, it also promotes the transfer of scientific knowledge to society. The institute consists of a main building in Seville, which has an innovative Stable Isotope Laboratory (LIE) and two field stations, the ICTS Doñana Biological Reserve, (Doñana Natural Area, Almonte, Huelva) and Roblehondo Field Station (Parque Natural de las Sierras de Cazorla, Segura and Las Villas).

Role Description:
This project involves an introduction to plant evolutionary ecology and epigenetics as part of the EpiDiverse network. There has been a recent upsurge of interest on the ecological and evolutionary significance of epigenetic processes, which involve heritable phenotypic changes unrelated to alterations in DNA sequence. In the case of plants mounting interest on epigenetic processes has been largely promoted by results showing that in some model species epigenetic changes in the phenotype can be induced by the environment and are often passed without alterations across generations. DNA cytosine methylation is a well-established epigenetic mechanism and the most studied one in plants. We will focus on DNA methylation and explore the general hypothesis that stress will induce heritable changes in DNA methylation that might differ among species with different ecological features. We will explore one abiotic recurrent stress (water deficit) and one more unpredictable biotic stress (herbivory).

Tasks to be performed:
The participant will assist on sample processing and experiments conducted under controlled conditions (greenhouse/climatic chamber) aiming to test this hypothesis. The participant will learn concepts of experimental design, methods of plant

evolutionary ecology (phenotyping and fitness estimates) and will be introduced to molecular (epi)genetics.

The tasks include: preparation of seeds (counting, weighing), analysis of insect feeding behaviour, adult plant phenotyping (date of flowering, number of inflorescences, number of flowers/inflorescence, flower size, leaf length, leaf specific mass, etc.), hand-pollination.

Required Applicant Profile:
EBD are seeking graduates in animal behaviour, biology, botany, ecology, zoology or related fields to carry out a 13-week internship at their research institute in Seville, Spain. Participants will be encouraged to attend weekly seminars hosted by the institute. Spanish language skills are not necessary but would be an asset.