Erasmus+ Traineeship

EMPLOYER INFORMATION	
Name of Organization	University of Murcia
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ENTERPRISE JOB DESCRIPTION	
Name of enterprise	Collaboration in the research project: Macroinvertebrate community dynamics in supralittoral rockpools
Duration	From 3 to 9 months
Working Hours	Around 30 h/week
Project Description	Iberian Mediterranean rockpools are an ideal system model to investigate whether any spatial population and community patterns can be attributed to spatial barriers (dispersal limitation), local environmental conditions (habitat filtering) or biological barriers (competition, priority effects). This study case provides opportunities to explore spatial structure of beetle populations and macroinvertebrate communities, understanding how local and regional factors interact to drive patterns of coexistence and species diversity of marine rockpools. **1. Specific aims** **O1. To determine geographical range and spatial patterns in the population structure of the three species of *Ochthebius* (*O.* (*Calobius*)**

	***quadricolis, O. lejolisii* and *O. subinteger*) of supralittoral rockpoolss in the Iberian Mediterranean coast**. We especially focus on the impact of distance among populations, main wind and marine currents, dispersal barriers, climate and habitat characteristics in explaining spatial patterns of genetic diversity. **O2. To compare multi-stress tolerance of focal species.** We develop experimental tests in the laboratory to study behavioral and physiological responses to combinations of temperature, salinity and desiccation stress. **O3. To determine mechanisms of coexistence of both *Ochthebius* species (habitat filtering, niche differentiation, founder effects) through field co-ocurrence patterns and the characterization of their ecological niche.** We characterize different aspects of the ecological niche (habitat specialization and functional niche) of each species and their niche overlap, using behavioural, physiological and biological traits obtained from field and laboratory approaches, and conducting competition experiments. **O4. To study patterns and processes in metacommunity structure of macroinvertebrates.** We analyse the importance of local versus regional variables (spatial and environmental) on macroinvertebrate community structure and diversity patterns (α, β and γ) at local scale and among pool clusters.
Tasks of the Erasmus intern	Collaboration in the analysis of microsatellite genetic data to determine spatial and temporal metapopulation dynamics. Collaboration in the analysis of climatic, geographical and landscape characteristic to explain spatial patterns of genetic diversity Collaboration in effect priority experiments in laboratory to develop coexistence models
Requirements	The applicant must have a fair background in biology and ecology, with basic laboratory skills with special interest in aquatic macroinvertebrate. Basic knowledge in SIG, R-studio programs and good level of English language are also required.

What do we offer	We offer immediate incorporation to an active project supported by national competitive funding. The student will benefit from large laboratory space, modern research facilities and from teamwork with highly competent PhD students and post-doctoral researchers, under the close supervision and guidance from senior personnel and in a friendly, collaborative environment. She/he will acquire expertise in experimental trails with insects, and analysis methods of molecular and ecological data.
Website	https://www.um.es/ecoaqua/