

**Mohamed Abdelaziz**, Department of Genetics, University of Granada, Spain



**Title:** *Ecological mechanisms underlying the stability of a high-mountain hybrid zone*

**Summary:** The species hybridization is a phenomenon whose consequences can go from the collapse and loss of diversity because of genetic introgression events to the rise of this diversity because of hybrid speciation. The understanding of the mechanisms underlying this phenomenon helps us to shed light on the consequent evolutionary processes and to identify priorities for conservation policies. We studied five populations from two *Erysimum* (Brassicaceae) species presenting a secondary contact zone in Sierra Nevada Mountains (SE Spain) and we characterized them phenotypically. Using genetic markers, we have estimated the genetic differentiation, the genetic structure, and the amount of recent gene flow between populations. A narrow unimodal hybrid zone, where the hybrid genotypes were more frequent than the parental genotypes, was found. Afterwards, we carried out two experiments to explore the pre- and post-zygotic reproductive barriers underlying the origin and maintenance of this narrow hybrid zone, as well as the selective pressures promoting local adaptation. Asymmetric reproductive barriers were found, together with significant differences between pre- and post-zygotic barriers. We re-sampled the populations 10 years after and we found similar patterns and characteristics in this secondary contact zone. Our results suggest that the pollinators are the main drivers for the hybrid zone, but a constant migration of plants from the parental population would be necessary for the long-term maintenance of that narrow hybrid zone.

**Bio Sketch:** I am a biologist with special interest in ecology, genetics and their interaction to answer broad questions on evolutionary biology. I was born and grew up in Melilla, a singular, small and wonderful city in North Africa. I left Melilla to start my undergraduate studies in the University of Granada, placed in the city with the same name. Granada was a renowned city for its multicultural character and its beauty, having been the capital of the last Andalusian Kingdom. In that environment I pursued my graduate studies and research works, which led to my PhD. After that, I moved as an Impact Research Fellow to the University of Stirling, located in central Scotland, a cold, wet and very nice place to meet warm people and wonderful landscapes. After that, I was funded by the Spanish Ministry of Economics with the project *TransSpeciation* to return to the University of Granada and work on the ecological and genetic mechanisms underlying the speciation process associated to important transitions in evolution. Since 2018 I have been a lecturer at the University of Granada where I am focused on establishing a solid line of research on plant speciation and hybridization and their consequences on biodiversity in Mediterranean ecosystems.