

## PhD opportunity at the ICM-CSIC Barcelona

The 3-year project (January 2017-December 2019) entitled: “Anthropogenic-Induced Metabolic COST in competing marine species” is seeking for a highly motivated student willing to do a PhD at the Marine Sciences Institute (ICM) from the CSIC in Barcelona.

The candidate will be involved in experimental manipulation of marine organisms (clams; fishes) in different environmental stress conditions as well as conducting *in vitro* exposures. The experiments will imply mostly physiological and biochemical measures after exposing the clams/fishes to physical (temperature and pH) and chemical (pharmaceutical drugs) exposure.

We offer a one-year contract with the possibility of renewal depending on the competence of the candidate.

We seek for a candidate holding a Master’s degree in Biology, Biochemistry, Aquaculture or similar with competitive marks to qualify for grant applications. A good command of the English, good statistics background and a driving licence are mandatory

Interested candidates please send CV with qualifications and two potential references to either Montserrat Sole: [msole@icm.csic.es](mailto:msole@icm.csic.es) or Francesc Maynou: [maynouf@icm.csic.es](mailto:maynouf@icm.csic.es) until the end of April 2017.

Please, find below a summary of the project:

### Abstract

Human activities provide marine species with two main hazards: changes in water physical parameters (e.g. temperature and pH) and effects derived from chemical exposures, both acting as stressing factors on marine organisms. The increase of sea water temperature has allowed some marine species to shift from lower to higher latitudes and become exotic species which, in some cases, may out-compete native ones. In addition, the capacity of acclimation to environmental stress factors may differ between native and exotic species, which may favour the establishment of invasive species in vulnerable ecosystems, such as the Mediterranean Sea. In the present proposal we aim at evaluating, in energetic terms, the metabolic cost of stress conditions, physical and chemical, alone and combined, under laboratory conditions. With the introduction of the measured parameters in the Dynamic Energy Budget (DEB) model we pretend to evaluate the consequences of the stressing conditions on closely related benthic species, two fish (*Solea solea* and *S. senegalensis*) and two clams (*Ruditapes decussatus*/*R. philippinarum*). The applied model allows extrapolation to more long term ecological consequences posed by the stressors.