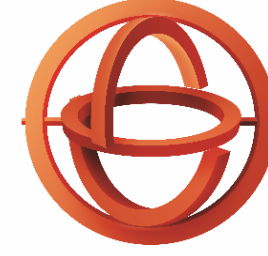


Description of Funded Research Projects

1<sup>st</sup> Call for H.F.R.I. Research Projects  
to support Post-Doctoral Researchers

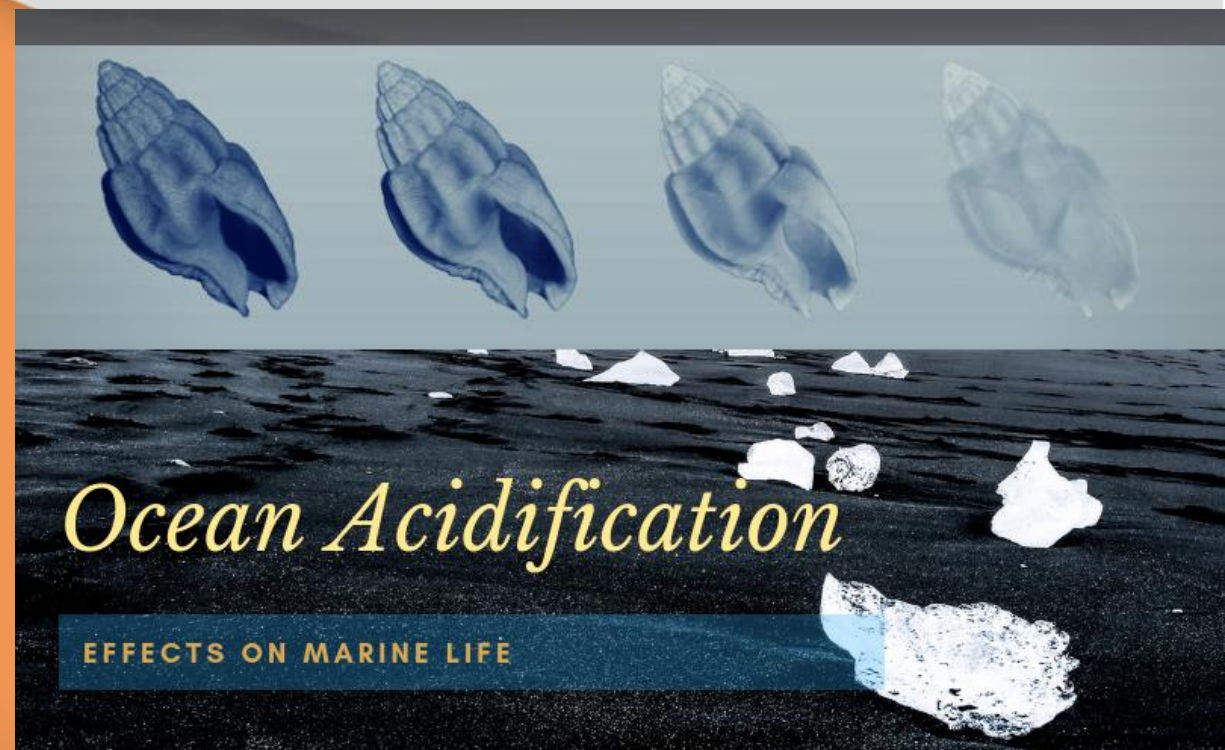


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Research Project Title:

**Effects of Climate Change and  
Ocean acidification on marine  
gastropods**

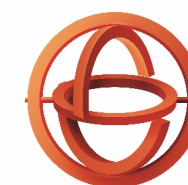
**Principal Investigator:**  
**Evangelia Chatzinikolaou**



**Popular Title:**  
**Effects of Climate Change on marine organisms**

**Scientific Field:**  
**Environment and Energy**

**Host Institution:**  
**Hellenic Centre for Marine Research**



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Anthropogenic activities, such as fossil fuel combustion and deforestation, are responsible for the increase of atmospheric carbon dioxide, which in turn is absorbed by the oceans causing changes in the seawater carbonate chemistry. Ocean acidification (low pH) decreases the calcium carbonate saturation states in seawater, thus inhibiting calcification rates in shell-forming marine organisms. Elevated carbon dioxide may have additional sublethal impacts on organismal, developmental and physiological levels and as a result can significantly suppress the abundance and diversity of species. This study will use an integrated multi-disciplinary approach in order to investigate morphological, physiological, behavioral, chemical and molecular responses of selected gastropod species on a complementary basis. A long-term experiment is scheduled in order to investigate the direct and indirect effects of low pH and increased temperature and also to reveal possible adaptations of the organisms. Four different treatments with a combination of low or ambient pH and increased or ambient temperature will be used in order to investigate the long-term synergistic effects of those two factors on marine gastropods.

Ocean acidification and warming is a worldwide phenomenon with no boundaries which will certainly affect ecosystem services and human communities. Several economic activities that depend on marine resources such as fishing, tourism and aquaculture, will be significantly affected by ocean acidification. This study can offer sound scientific knowledge and put forward policies and regulations in order to achieve a better environmental management and protection of our oceans.

Ocean acidification affects calcifying organisms, thus the abundance of commercially important species (e.g. clams, oysters, sea urchins, corals) is likely to decrease and human communities that depend upon these resources for their income will be also affected. Ocean acidification influences planktonic productivity and as a result commercial fish stocks might also be affected. Up to now, only a fragmented array of international agreements and initiatives has emerged which do not specifically address ocean acidification but are generally targeting climate change and pollution. Despite the apparent urgency of the issue, ocean acidification is mentioned only as a "footnote" in environmental policies. This project will address above enquiries at a political and decision-making level in order to support the designation of new directives and legislations for ocean acidification, especially now that the evaluation of the targets set by the Open Working Group on Sustainable Development Goals for 2020 is fast approaching.



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During the difficult times of economic crisis in Greece and the even more adverse economic situation that research institutes are facing, HFRI funding was a unique opportunity for me to continue my postdoctoral research here instead of being forced to return abroad. Furthermore, HFRI is the only funding source for postdoctoral researchers who cannot be considered "early stage researchers" any longer, because several years have passed since they have been awarded with their PhD.

Unfortunately, most calls for funding proposals in Greece refer only to early stage researchers thus excluding older researchers, who have never had the opportunity to claim a Researcher position (grade level) due to the lack of recruitment in this area for more than 10 years. HFRI is also an important and meritocratic recognition regarding my scientific work, since this is the first time that postdoctoral researchers have the opportunity to manage and coordinate their projects independently.

*The Principal Investigator,  
Evangelia Chatzinikolaou*

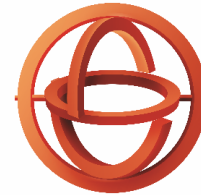
## Funding

Amount: **140,000 €**

Duration: **36 months**

Foundation: **H.F.R.I.**





**H.F.R.I.**  
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Research & Innovation

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