

**From the Arctic to the Mediterranean:
scientists collaborate on large-scale experiments in all water systems across Europe**

Berlin, 17 April 2017

Scientists from 19 research institutes and 2 enterprises from 12 countries across Europe have joined forces in a *Network of Leading European AQUATIC MesoCOSM Facilities Connecting Mountains to Oceans from the Arctic to the Mediterranean*, in short: AQUACOSM. The network will perform the first systematic large-scale experiments to compare how both freshwater and marine ecosystems respond to environmental pressures including climatic change and other effects of the growing human population. AQUACOSM will increase the understanding about complex processes controlling water ecosystems **all the way from mountain lakes and rivers to coasts and oceans**. A better understanding of these complex processes is urgently needed to improve predictions of our future environment and to develop plans to counteract the strong impact of human activities on one of **our most important global resource: water**, and the life in it.

AQUACOSM will open their unique experimental mesocosm research facilities for collaboration with scientists from all over the world. Mesocosms are controlled and replicated experimental water enclosures, large enough (from ca. 1 to 1000 m³) to allow experiments on whole ecosystems in close to natural conditions. Using such mesocosms is currently the most reliable way to predict effects of future environmental and anthropogenic pressures on all the complex aquatic ecosystems.

The goals of AQUACOSM are to:

1. **Establish a Network integrating scattered know-how** between freshwater and marine research infrastructures to further improve mesocosm experimental approaches
2. **Promote ground-breaking developments in mesocosm and other research technology** such as new high-frequency measurements and real-time data processing, to provide more accurate results.
3. **Train a new generation of scientists** conducting advanced collaborative research integrating scientific disciplines across mesocosm infrastructures in Europe
4. **Offer researchers from around the world** a chance to propose and test new scientific hypotheses at the world-leading European facilities. AQUACOSM will offer **Transnational Access** (economical support) to **at least 340 scientists** for more than 11,500 person-days, to collaborate and exchange ideas between scientists, enterprises and decision makers
5. Coordinate **Joint Research Activities** using the latest mesocosm technologies along geographical gradients from the Arctic to the Mediterranean and across salinity boundaries to investigate aquatic ecosystem responses to multiple environmental climate-related key stressors

The AQUACOSM project started in January 2017 and will run until December 2020. It is unique in size and approach, as it combines research facilities from mountains to oceans and from the Arctic to the Mediterranean. AQUACOSM aims to inject aquatic science with new ideas, concepts and data to meet critical scientific and societal challenges of the 21st century. AQUACOSM is funded by the European Commission EU H2020-INFRAIA-project No 731065, with a Budget of 9,999,807 €.

CITATION: Since much of freshwater and marine sciences have been separated for over 100 years, we are very excited to start this first international collaborative project between both these “worlds”. We anticipate to rapidly advance the aquatic science, simply by joining forces with each other - says the project leader Dr. Jens Nejstgaard, at FvB-IGB, Germany.

FOR MORE INFORMATION:

Project Page: www.aquacosm.eu

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