EU network of mesocosm facilities for research on marine and freshwater ecosystems open for global collaboration

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Newsletter 2022 - 12

Dear AQUACOSM friends,

it is that time of the year again... We are looking forward to the opportunities that are waiting for you in the coming year of 2023. We are also looking back and are happy to share some of the achievements from 2022.

Enjoy reading, merry Chistmas and see you next year!
The AQUACOSM-plus Team

Third Call for Transnational Access to European Aquatic Mesocosm Facilities in 2023

The EU Research Infrastructure project **AQUACOSM-plus** has **opened** the **third call for Transnational Access (TA) in 2023** to more than **60 aquatic mesocosm facilities throughout Europe.**

AQUACOSM-plus provides funding to **academic and industrial (including SMEs) research groups, individual scientists, experts, professionals and university students from all over the world** (up to 20% non-Europeans and associated countries) to:

- **participate in mesocosm experiments** that have been planned by the facility providers
- **propose own ideas for mesocosm experiments at** the partner facilities in cooperation with the local team
- **participate in or propose coordinated experiments** at several partner facilities in cooperation with an international team

AQUACOSM-plus is a unique collaborative international project supporting experiments in various aquatic ecosystems, ranging from the Sub-Arctic to the Mediterranean, from mountains to lowlands, from freshwater to marine, and from ultra-oligotrophic to hyper-eutrophic conditions, including benthic and pelagic systems.

AQUACOSM-plus aims to **promote effective international scientific collaboration and technological knowledge transfer** across traditional barriers between regions, countries and traditionally separated science disciplines, such as marine and freshwater research.

AQUACOSM-plus is **enhancing collaboration among the European Environmental Research Infrastructures** (RIs) by engaging in multidisciplinary joint research activities, some of which are open for participation in this call.

More information on the TA APPLICATION PROCESS and DEADLINES for individual calls at the respective facilities can be found HERE:

Your Chance to Apply for Transnational Access Funding for 2023

STAY TUNED!

Next fall the **final AQUACOSM-plus Symposium** will be held in Antalya, Turkey; **early November 2023**. More information regarding the exact dates, the programme, registration, venue, etc. will follow.

Open Data Workshop

Our workshop on open data part I was a great opportunity for all participants. The recording will be available on YouTube soon. **Part II** will be held **25th January 2023**. More info in the **workshop agenda**.

Studying Baltic Sea Heatwaves

AQUACOSM-plus and JERICO-S3 in a joint Action of Research Infrastructures

In this study a natural plankton community from the Gulf of Finland was enclosed to mesocosms of the indoor facility of SYKE, Helsinki, to study the effocts of a heat wave in the northern Baltic Sea in August-September 2022. The experiment was a joint RI-RI activity of AQUACOSM-plus and JERICO-S3. Groups from the IGB (Germany), HCMR (Greece), CNRS (France) and SYKE (Finland) measured more than 50 variables, including monitoring temperature in real-time also emplyoing automated sensors for two weeks. Temperature was the only manipulation in addition to the initial removal of mesozooplankton. Results are coming . For more details, please read **here**.

As these actions are much more than pure science and always contain the personal experience, we are happy to see some more unusual insights into the personal and familar side of a TA action like this in the **adventures of little Maria.**

Testing “Grand Challenges” with Mobile Light Weight Mesocosms and Sensor Systems

Joint Research Activity: MesoPike - Experiment

Global warming, cyanobacterial blooms or greenhouse gas emissions are only some of the many Grand Challenges we are facing in aquatic ecosystems. Lead by the Ludwig Maximilians-University Munich an AQUACOSM-plus team from Germany, Denmark and Romania tested how greenhouse gas emissions develop after manipulating the light quality to the system and inducing a cyanobacterial bloom. For four weeks measurements were taken employing mobile light-weight mesocosms with new cost-efficient sensor systems at the shallow Pike Lake in Transylvania.

Read more and stay tuned for the results!

Mobile, light-weight, pelagic mesocosm setup: 3 of 6 mesocosms covered with red foil. Yellow floaters hold 500kg each and secure against higher waves. © Maria Stockenreiter

Lifting device for swimming chamber with attached sensors and control device connected to a solar panel. ©Eti Levi

Fall School for Early Career Researchers

The AQUACOSM-plus Fall Training School for mesocosm-based research during the last week of October 2022 in Cluj-Napoca (Romania) was a great success for teaching a new generation of mesocosm-interested young scientists!

This five-day school brought together 20 undergraduate and graduate students from all over Europe with experts from within the AQUACOSM-plus consortium. The training school kicked off with a series of lectures and discussions concerning the grand challenges in aquatic research, different mesocosm systems, designing and conducting experiments in mesocosms and analyzing data arising from those experiments.

On top of hands-on activities on statistical tools, phytoplankton analysis and building low cost mesocosms at the Institute of Biological Research in Cluj-Napoca, the students explored Transylvania on a field trip through serpentines and small countryside villages to see the wooden churches of the Barsana Monastery and the Merry Cemetery with its hand painted, colorful tombstones. In the end, the event was concluded with a greater extended network of ECRs and experts, a head full of new perspectives and approaches.

If you are interested in the ECR network and its activities, consider **subscribing to the ECR targetted newsletter**

Coordinated Mesocosm Experiments across Europe

Grassroots Initiative in Action

Starting at the AQUACOSM-plus Fall School 2022, small groups of Early Career Researchers started to develop their own ideas for potential future mesocosm experiments, which were pitched to the senior scientists with the chance to be implemented and funded by AQUACOSM-plus in 2023. Now this was taken a step further in a joined meeting of four groups of ECRs and the AQUACOSM-plus facility providers to discuss these ideas (listed below), how to conduct the experiments and which facilities would participate.

- Decoupling the effects of browning and DOC on aquatic systems
- How are GHG emissions affected across a temperature and nutrient gradient?
- How does salinity affect grazing of zooplankton on phytoplankton across a latitudinal longitudinal gradient?
- Impacts of unequilibrated alkalinity enhancement on (phyto)plankton community and within species level

This grassroots initiative for coordinated experiments across the AQUACOSM-plus network will be elaborated further and integrated into TA opportunities.

So, stay tuned for more information and keep an eye open on the TA portal!

What Else...?

Join us at ASLO 2023

AQUACOSM-plus members will lead a special session at the **ASLO 2023 Aquatic Sciences Meeting in Palma de Mallorca, 04-09 June 2023**.
See you there!

Job Opportunity

Come and work with us! This is a **great opportunity** if you are interested in field measurements and coordinated mesocosm experiments in Sweden within SITESAquaNet, fieldsites and AQUACOSM-plus.

Website UPGRADE

Our project **website** has seen a major upgrade. Find our services easily with only a few clicks: **TA opportunities, papers, metadata catalogue, SOPs, etc.** Also have a look at the new **knowledge base**! We will continue to update the site.

Quick Links:

Transnational Access | **Mesocosm Facilities**

Knowledge Base | **Metadata & Data**

Events | **News**

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