Respiration in the Mesopelagic Ocean

International training course on Mesopelagic Respiration

Aim

- To train early career researchers in the latest science and technologies related to mesopelagic respiration
- To provide hands-on experience in using traditional and state-of-the-art methods to measure and model mesopelagic respiration
- To enable knowledge exchange with the institutional colleagues of the course participants
- To develop an international network of researchers focused on mesopelagic processes and ocean carbon storage

Course participants will :

- Learn about the latest science and technologies related to mesopelagic respiration
- Gain hands-on experience with traditional and state-of-the-art methods to measure and model mesopelagic respiration
- Undertake a project using two or more methods they have learned
- Give a presentation on the results of the project

Venue

The course will take place at the IOCAG - ULPGC (Instituto de Oceanografía y Cambio Global – Universidad de Las Palmas de Gran Canaria) and PLOCAN (Plataforma Oceánica de Canarias), Spain.

Dates

21st – 27th May 2023

Accommodation

Participants will stay in shared self-catering 2 to 3 bedroom apartments in Taliarte, Melenara, or Playa del Hombre close to the course venue.

Catering

There are several restaurants nearby e.g. Cofradía, and a small kitchen is available at the Institute to bring / prepare food at lunch time.

Capacity

Due to the hands-on nature of the course, there are only twelve places available in Las Palmas. Participants should be early career researchers (within 10y of completing their PhD), and preference will be given to applicants from developing and developed countries where there is limited expertise in the techniques used to measure mesopelagic respiration.

Application procedure

To apply for a place in Las Palmas, please submit

- a completed application form,
- a letter describing why your research, your career progression and your local colleagues would benefit from your participation in the course,
- your CV and
- a letter of recommendation from a senior colleague (such as an advisor, group leader or Head of Department)

by the deadline of **20 March 2023**.

Successful applicants are expected to :

- Produce a 2-3 minute recorded introduction to themselves, their work, their hobbies etc (this will be made available to all course participants before the course)
- Watch / read all the learning materials made available before the course
- Produce a 'flash talk' of 5 minutes alongside a poster to describe their work (this will be presented during the course and recorded)
- Complete a post-course survey
- Prepare and present a lecture or practical training session to their colleagues at their host institution after the course

Cost

The cost of the course will consist of :

1. Travel costs from your home institute to the Canary Islands, Spain return
2. Accommodation and food costs for the duration of the course
3. Registration fee of **Euro 500**

The course organisers are applying for funds to cover as much as possible of these costs, however we cannot guarantee that everything will be covered for everyone. Each of the grants that we can apply for have different eligibility criteria associated with them. Please indicate in your application letter what you are able to pay yourselves, and what you would need support for.

<u>Training course</u>
The course will be given in English, by members of the Scientific Committee on Oceanic Research (SCOR) working group on mesopelagic respiration (https://www.remo-scor-wg161.com/) and will consist of interactive lectures and seminars and hands-on experience with a wide range of techniques and instrumentation used to derive estimates of mesopelagic respiration.

- Lecture 1 – Introduction to training course and overview of mesopelagic respiration (Carol Robinson, University of East Anglia, UK)
- Lecture 2 – Oxygen consumption and CO_2 production (Matthieu Bressac, Villefranche, France)
- Lecture 3 – Enzymatic techniques (Javier Aristegui, University of Las Palmas de Gran Canaria, Spain)
- Lecture 4 – Particle attached and single cell respiration (Morten Iversen, AWI Germany; Gerhard Herndl, University of Vienna, Austria)
- Lecture 5 – Biogeochemical Argo (Giorgio Dall'Olmo, OGS Italy)
- Lecture 6 – Biogeochemical approaches (Xose Anton Alvarez-Salgado, CSIC Spain)
- Lecture 7 – Modelling (Iris Kriest, GEOMAR Germany)

- Practical A – oxygen consumption and CO_2 production
- Practical B – enzymatic techniques
- Practical C – single cell respiration
- Practical D – Biogeochemical Argo data
- Practical E – apparent oxygen utilization and mass balance approaches
- Practical F - modelling