



Międzynarodowa Środowiskowa Szkoła Doktorska
przy Centrum Studiów Polarnych
w Uniwersytecie Śląskim w Katowicach

ul. Bedzińska 60
41-200 Sosnowiec
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www.mssd.us.edu.pl



Reference No: IEDS/2020/IO PAN/03

Title of PhD project: Seasonal and inter annual variability of meroplankton in an Arctic fjord (Isfjorden)

Leading unit: International Environmental Doctoral School associated with the Centre for Polar Studies at the University of Silesia in Katowice (IEDS) - Institute of Oceanology Polish Academy of Sciences

Mode of study: full-time

Degree to be obtained: PhD in the field of natural sciences, in the discipline of Earth and related environmental sciences

Duration: 4 years (8 semesters), from October 2020

Language: English

Scholarship: approx. 2370 PLN (1-2nd year); approx. 3650 PLN monthly (3-4th year)

Requirements and regulations: www.mssd.us.edu.pl/kandydat-mssd/

Registration online: www.irk.us.edu.pl

Conditions of recruitment:

I STAGE: Knowledge test in the field of discipline. The test is scored on points: from 0 to 10 points.

A positive result of the test is that the candidate gets a minimum of 7 points. Absence on the test disqualifies the candidate from the entire qualification procedure.

II STAGE: a) the final result of the candidate's completion of higher education (maximum 6 points, diploma grading ratio: 6.0 (excellent) - 6 points, 5.0 - 5 points, 4.5 - 4 points, 4.0 - 3 points, 3.5 - 2 points, 3.0 - 1 point), b) for candidates (students) referred to in art. 186 para. 2 of the Act - a certificate of average grade from at least three years of uniform Master's studies, rounded to one decimal place, according to the conversion factor: 6.0 (excellent) - 6 points; 5.0 - 5 points; 4.5 - 4 points; 4.0 - 3 points; 3.5 - 2 points; 3.0 - 1 point).



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III STAGE: Interview for assessing: the candidate's intellectual level, knowledge of English, substantive level of the doctoral dissertation project, motivations and predispositions for scientific work, previous scientific achievements of the candidate (maximum 15 points).

Requirements:

1. MSc degree (or equivalent) in Biology, Oceanography or equivalent science discipline.
2. General knowledge about marine ecology.
3. Very good verbal and writing skills in English in order to provide excellence in research in the area (Polish is not required for foreigners).
4. Ability to work independently and as part of a team environment.
5. Creativity and ability to think critically.
6. Excellent networking skills in order to develop strong relationships with partners and with academics and researchers from other institutions.
7. Skills in biodiversity data analysis.
8. Great enthusiasm for the subject and work generally.

Tasks description:

1. Taking part in cruises and field work.
2. Laboratory works, including faunal and molecular analyses of planktonic assemblages.
3. Data analysis using statistical packages, e.g. Statistica, R, Primer; PERMANOVA
4. Preparation of scientific articles and conference presentations.
5. Regular reporting of work progress.
6. Support in the daily scientific tasks of the Department of Marine Ecology.

Abstract

Meroplankton (organisms that spend part of their development cycle in the water column) is still very poorly understood yet extremely important for marine ecosystems. Meroplankton comprise mainly of larvae of benthic organisms. Meroplankton can occur in enormous



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densities, providing food for other trophic levels. Pelagic larval phases also allow benthic organisms to spread into new areas.

Due to the morphological similarities within higher taxonomic units, the determination of meroplankton components is imprecise and often only possible for major taxonomic groups, e.g. Echinodermata, Bryozoa. Meroplankton morphological analyses are very time consuming and their taxonomic identification resolution is unsatisfactory. Therefore, for the proposed project, modern molecular methods will be used in combination with detailed morphological analyses. The molecular barcoding will allow meroplankton to be determined to the lowest possible taxonomic rank.

Individual elements (groups of animals) of meroplankton appear periodically and in variable numbers in water column. This results from the different dynamics and life strategies of organisms that have a meroplankton phase in their life cycle. The proposed research will allow to investigate the seasonal and taxonomic variability of Arctic meroplankton and the impact of environmental conditions on the structure of these assemblages. The project will also help to understand the life cycles of many Arctic benthic organisms that possess larvae in their life cycle, which are part of meroplankton.

This project will be based on both already existing samples and newly collected material.

Other information:

1. The supervisor will be Prof. Piotr Kukliński, email: kuki@iopan.pl, Marine Ecology Department, Institute of Oceanology Polish Academy of Sciences and Agata Weydmann-Zwolicka, email: agata.weydmann@ug.edu.pl, Department of Marine Plankton Research, Institute of Oceanography University of Gdańsk
Auxiliary supervisor: Dr Marta Ronowicz, email: martar@iopan.pl, Marine Ecology Department, Institute of Oceanology Polish Academy of Sciences.
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