

MicroPolar[μP]: Processes and Players in Arctic Marine Pelagic Food Webs - Biogeochemistry, Environment and Climate Change

RCN: Polar Program. Project Number 225956/E10
RIS Database project ID 6786

Period: March 2013 – March 2017

<https://www.facebook.com/themicropolarproject>
<http://micropolar.blogspot.no/>

Abstract: The interaction between the biosphere, the atmosphere and the hydrosphere is mediated by microorganisms being the main drivers of biogeochemical cycles in the ocean and the main producers and consumers of inorganic nutrients, organic carbon and CO₂. The MicroPolar [μP] project focuses on marine microbial food webs and biogeochemical cycles in the Arctic Ocean and will provide a better description and understanding of the organisms, the processes, and the feedback mechanisms that shape this interaction. The most critical R&D challenges posed by environmental change in the Arctic Ocean concerns the role of microorganisms; "Who are they?", "What are they doing?", "How do they interact?" and "How do they respond to the current climate change?". A project approaching these questions calls for interdisciplinary collaboration. State of the art analytical techniques and metagenomics will be used to describe the microbial community and to quantify carbon flow in Arctic microbial food webs during a full annual cycle. Sensitivity experiments with biogeochemical process studies in mesocosms will be used to inform on the key importance of biogeochemical feedbacks to climate change and rising CO₂. The project partners cover a range of disciplines including microbial ecology, climate research, biogeochemistry, marine chemistry, metagenomics and ocean modeling, which all are required to conduct the research and to integrate the results in an Earth system science and environmental management perspective. MicroPolar [μP] will generate a unique dataset, with a potential bioprospecting spin-off. It will improve Earth system models and climate projections, and contribute to the conception needed for a knowledge based management of natural resources and industrial activity in the polar regions.

#	Partner Institution	Country
Core Partners		
1	Department of Biology, University of Bergen	Norway
2	UNI Environment, UNI Research	Norway
3	Department of Biology, University of Oslo	Norway
4	Norwegian Institute for Water Research	Norway
5	SALT	Norway
National Collaboration		
6	Department of Arctic and Marine Biology, UiT	Norway
7	UNIS	Norway
8	Centre for Climate Dynamics	Norway
International collaboration		
9	CNRS/Banyuls,	France

10	CNRS/Roscoff	France
11	AWI/Bremerhaven	Germany
12	University of Glasgow	Scotland
13	Lawrence Berkeley National Laboratory, California	USA
14	University of South Florida	USA
15	San Diego State University	USA