# *Forskningsgruppen for marin mikrobiologi*

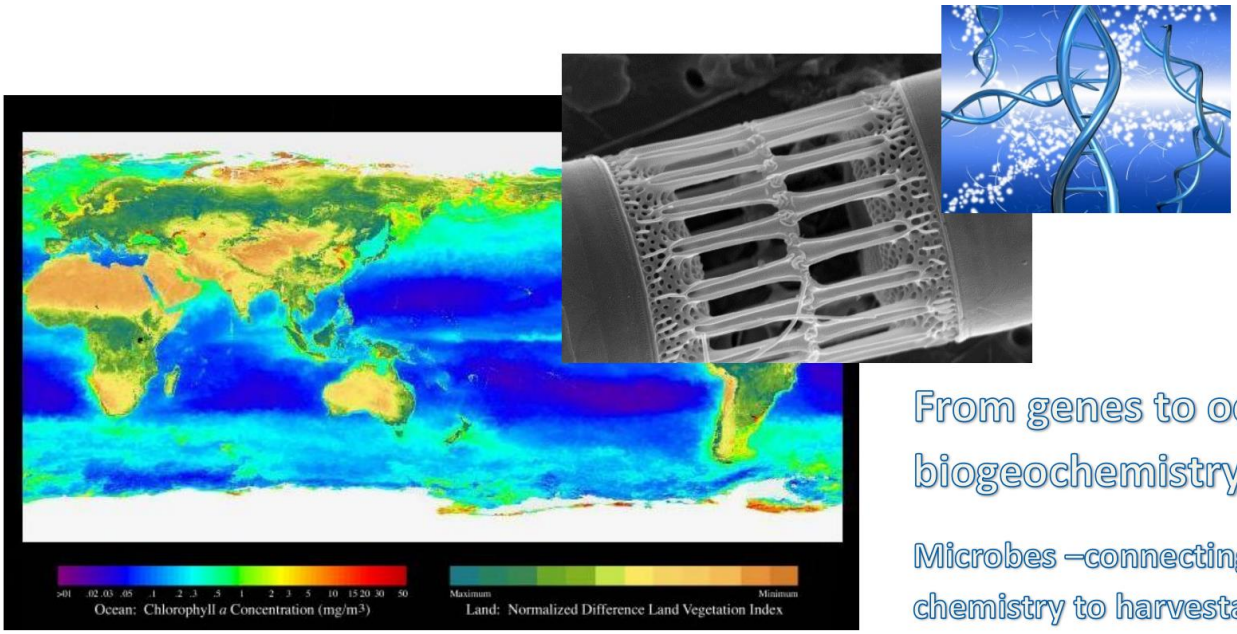
## *Research Group for Marine Microbiology*

*We try to:*

**Understand how the microbial part of the marine pelagic food web functions as a system.**

*Group:* Ca. 25 persons in total (M.Sc. and Ph.D. students, post.docs, permanent scientific and technical staff)

*Location:* On the 5'th floor BIO-blokk B




From genes to ocean biogeochemistry

Microbes –connecting ocean chemistry to harvestable resources

The place to do your master thesis if you are interested in how things are connected:

*Molecular biology – Taxonomy – Ecological theory – Organism form and function – Mathematical modeling – Biodiversity – The coupling between physics and biology – Biogeochemistry – Global C-cycle – Ecostoichiometry – Evolution – Single cell biology – Microbial ecology of the fjords of Western Norway – The changing Arctic – Virus ecology – Trade-off between organism traits – Population dynamics – Mesocosm experiments – Artificial ecosystems … …*

**Some ongoing projects:**

**The Nansen Legacy** - National research project on climate and ecosystem change in the Barents Sea and adjacent Arctic Basin.

**HAVOC Ridges** – Safe Havens for ice-associated flora and fauan in seasonally ice-covered Arctic Ocean

**AquaCosm** – Network of European Aquatic Mesocosm facilities

**Cave Ice** – Microbiome along a chronosequence in Svarhamar Ice Cave

**VirVar** – Virus – phytoplankton co-existence using haptophytes as role model

**MIXsTRUCT** – Impact of mixotrophs on the structure of marine pelagic food web

**SIMPLEX** – Self-similarity in ecosystem organization, from virus-host interactions to biomass and productivity scaling laws

**Interested in a master thesis? – Come and talk to us on the 5th floor BIO-B**

| Theme | Supervisor | Email |
|---|---|---|
| Virus and bacterial production | Prof. Gunnar Bratbak | Gunnar.bratbak@uib.no |
| Phytoplankton seasonality | Prof. Jorun Egge | Jorun.egge@uib.no |
| Light and vertical migration of microalgae | Prof. Svein Rune Erga | Svein.erga@uib.no |
| Ecological theory, nutrient cycling | Prof. Frede Thingstad | Frede.Thingstad@uib.no |
| Phytoplankton – virus interactions | Prof. Ruth-Anne Sandaa | Ruth.sandaa@uib.no |
| Protist interactions | Researcher Aud Larsen | Aud.Larsen@uib.no |
| Ecological theory, virus-host interactions | Researcher Selina Våge | Selina.vage@uib.no |
| Molecular prokaryote biodiversity | Prof. Lise Øvreås | Lise.ovreas@uib.no |

**What we publish (examples):**


- Müller O, Wilson B, Paulsen ML, Rumińska A, Armo HR, Bratbak G, Øvreås L (2018). Spatiotemporal dynamics of ammonia-oxidizing Thaumarchaeota indistinct Arctic water masses. *Front Microbiol* 9:24. doi:10.3389/fmicb.2018.00024
- Steinrücken P, Prestegard SK, De Vree JH, Storesund JE, Pree B, Mjøs SA, Erga SA (2018). Comparing EPA production and fatty acid composition of three Phaeodactylum tricornutum strains under western Norwegian climate conditions. *Algal Res* 30:11-22. doi:10.1016/j.algal.2017.12.001
- Våge S, Bratbak G, Egge J, Heldal M, Larsen A, Norland S, Lund Paulsen M, Pree B, Sandaa R-A, Foss Skjoldal E, Tsagaraki T, Øvreås L, Thingstad TF (2018) Simple models combining competition, defence and resource availability have broad implications in pelagic microbial food webs. *Ecol Lett* doi:10.1111/ele.13122

- Pree B, Larsen A, Egge JK, Simonelli P, Madhusoodhanan R, Tsagaraki T, Våge S, Erga SR, Bratbak G, Thingstad TF (2016) Dampened copepod-mediated trophic cascades in a microzooplankton-dominated microbial food web: a mesocosm study. *Limnol Oceanogr* doi:10.1002/lno.10483
- Bratbak G (2015) On the progress of understanding algal viruses. *Persp Phycol* 2:65-67 doi:10.1127/pip/2015/0035
- Erga SR; Ssebiyonga N, Hamre B, Frette O, Hovland E, Hancke K, Drinkwater K, Rey F (2014) Environmental control of phytoplankton distribution and photosynthetic performance at the Jan Mayen Front in the Norwegian Sea. *J. Mar. Syst.* 130:193-205 doi:10.1016/j.jmarsys.2012.01.006
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- Haraldsson, M., K. Tonnesson, P. Tiselius, T. F. Thingstad and D. L. Aksnes (2012). "Relationship between fish and jellyfish as a function of eutrophication and water clarity." Marine Ecology Progress Series 471: 73-85. Heldal, M., S. Norland, E. S. Erichsen, T. F. Thingstad and G. Bratbak (2012). "An Unaccounted Fraction of Marine Biogenic CaCO3 Particles." Plos One 7(10).
- Larsen, A., T. Tanaka, M. V. Zubkov and T. F. Thingstad (2008). "P-affinity measurements of specific osmotroph populations using cellsorting flow cytometry." Limnology and Oceanography-Methods 6: 355-363.
- Larsen, J. B., A. Larsen, G. Bratbak and R. A. Sandaa (2008). "Phylogenetic analysis of members of the Phycodnaviridae virus family, using amplified fragments of the major capsid protein gene." Applied and Environmental Microbiology 74(10): 3048-3057.
- Liu, J., G. Bratbak, T. Zheng and R. Thyrhaug (2011). "Effects of virus infection on expression of cell cycle regulatory proteins in the unicellular marine algae Emiliania huxleyi." Acta Oceanologica Sinica 30(4): 89-95.
- Martiny, J. B. H., B. J. M. Bohannan, J. H. Brown, R. K. Colwell, J. A. Fuhrman, J. L. Green, M. C. Horner-Devine, M. Kane, J. A. Krumins, C. R. Kuske, P. J. Morin, S. Naeem, L. Ovreas, A. L. Reysenbach, V. H. Smith and J. T. Staley (2006). "Microbial biogeography: putting microorganisms on the map." Nature Reviews Microbiology 4(2): 102-112.
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- Rodriguez-Valera, F., A.-B. Martin-Cuadrado, B. Rodriguez-Brito, L. Pasic, T. F. Thingstad, F. Rohwer and A. Mira (2009). "OPINION Explaining microbial population genomics through phage predation." Nature Reviews Microbiology 7(11): 828-836.
- Sandaa, R.-A., L. Gomez-Consarnau, J. Pinhassi, L. Riemann, A. Malits, M. G. Weinbauer, J. M. Gasol and T. F. Thingstad (2009). "Viral control of bacterial biodiversity - evidence from a nutrient-enriched marine mesocosm experiment." Environmental Microbiology 11(10): 2585-2597.
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