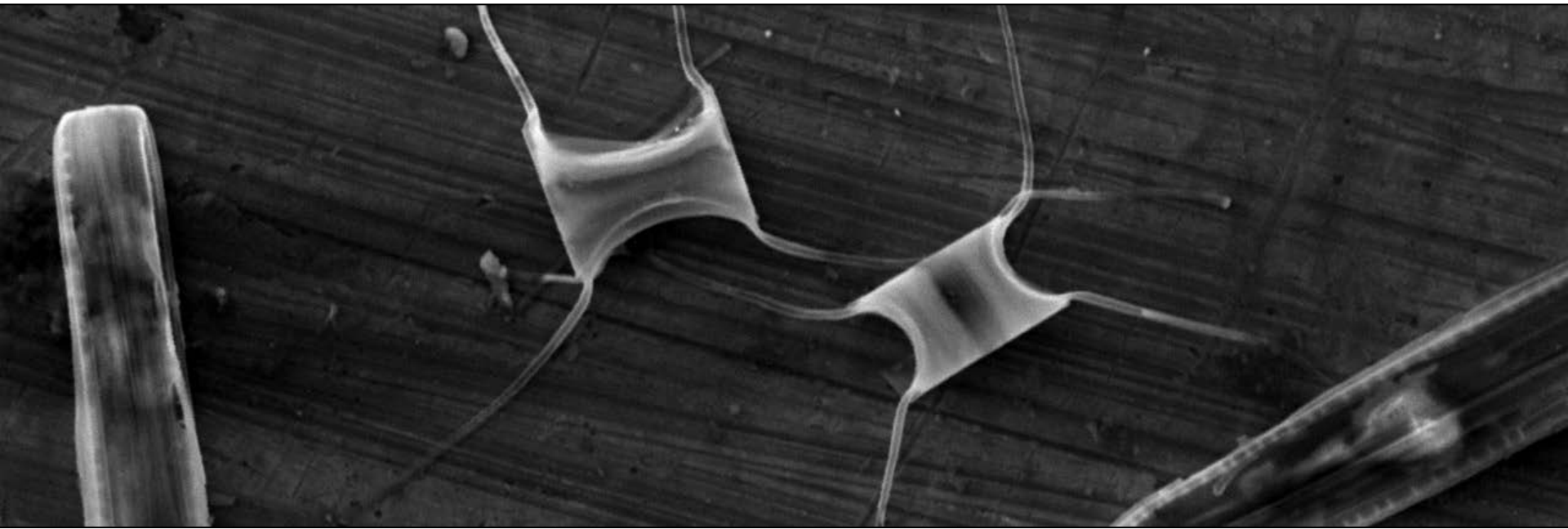


Diatom - ARCTIC



Diatom Autecological Responses with Changes To Ice Cover

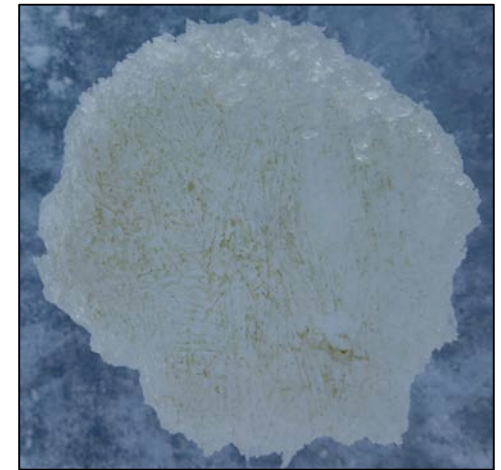
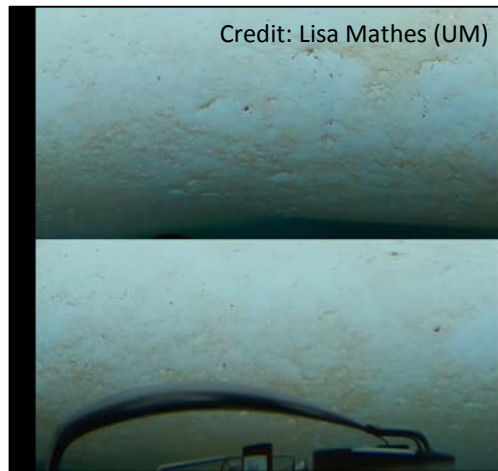
PI: A.M. Anesio¹, M. Nicolaus², T. Brown³, M. Graeve¹, J.C. Landy¹, C. Haas², M. Tranter¹

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Climate change in the Arctic has the potential to affect the phenology, species composition, productivity, and nutritional value of Arctic sea ice algal blooms



Current research overlooks the autecological (species-specific) responses of sea ice algae to changing ice habitat conditions



Investigate the autecological response of sea ice diatoms to changes in sea ice characteristics

WP1 Characterizing habitat conditions and acclimation strategies (AA, MT, KC)

- Document environmental conditions of different ice habitats (e.g. MYI vs. FYI)
- Assess diatom acclimation to growth conditions in field and laboratory settings
 - Photophysiology
 - Productivity
 - Speciation

WP2 Defining lipid composition as a function of growth conditions (TB, MG)

- Measure lipid & isotope composition
- Investigate their variability with diatom species and growth conditions

WP3 Evaluating the production potential of sea ice habitats (MN, JL, CH)

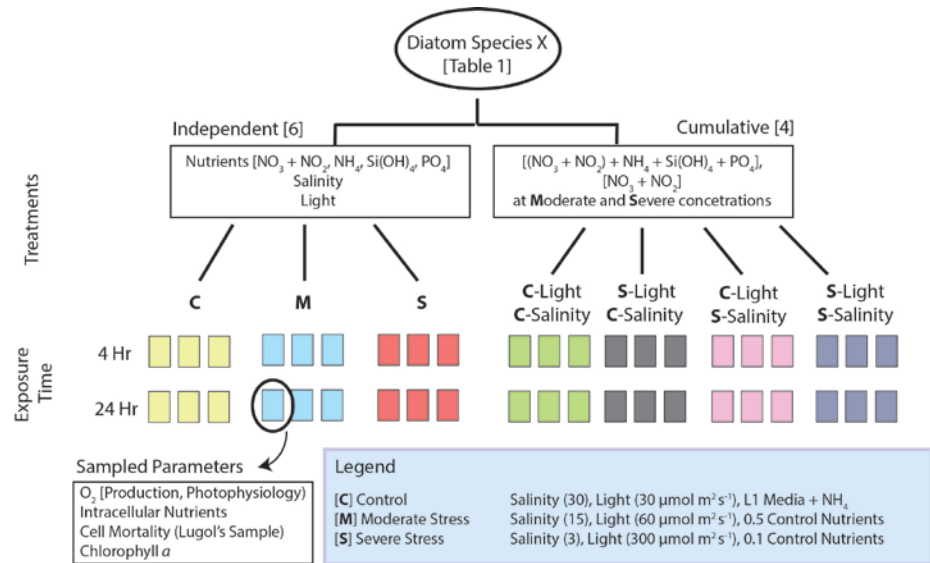
- Integrate radiative transfer modelling & ROV measurements to characterize ice habitats
- Assess sensitivity of diatom species to climate change using the physical-biogeochemical model BFM-SI

Integration of laboratory and field measurements to characterize diatom response to light, nutrient and salinity

Sea ice habitats in Alert & Dease Strait



Culturing of (4) diatoms at LowTEX



Timeline to completion...

