Environmental Lipidomics of Sinking and Suspended Particles

SCIENCE GOALS

- Fully develop an analytical approach (i.e. environmental lipidomics) to characterize the ≈20% of marine particulate organic carbon composed of lipids in their totality at the molecular level.
- Use lipidomics to provide new insights on how planktonic microbes respond to chemical , biological, and physical factors in their environment.
- Shed new light on the identity, sources, and fates of the vast diversity of lipids from planktonic microbes, which together compose an export flux of 1-2 Pg C y^{-1} from the upper ocean to the mesopelagic zone.

TEAM MEMBERS

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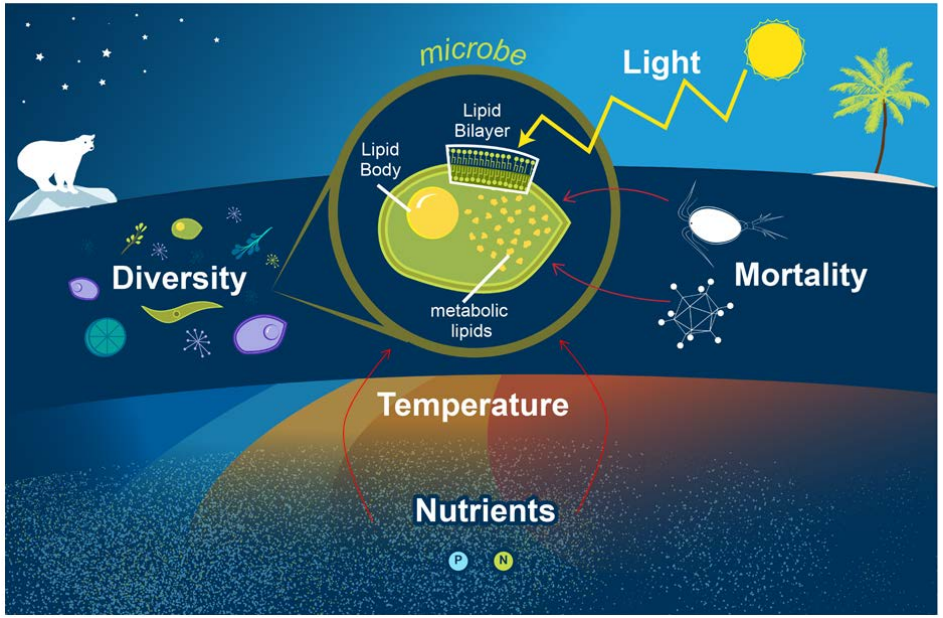

EXPORTS
EXport Processes in the Ocean from RemoTe Sensing

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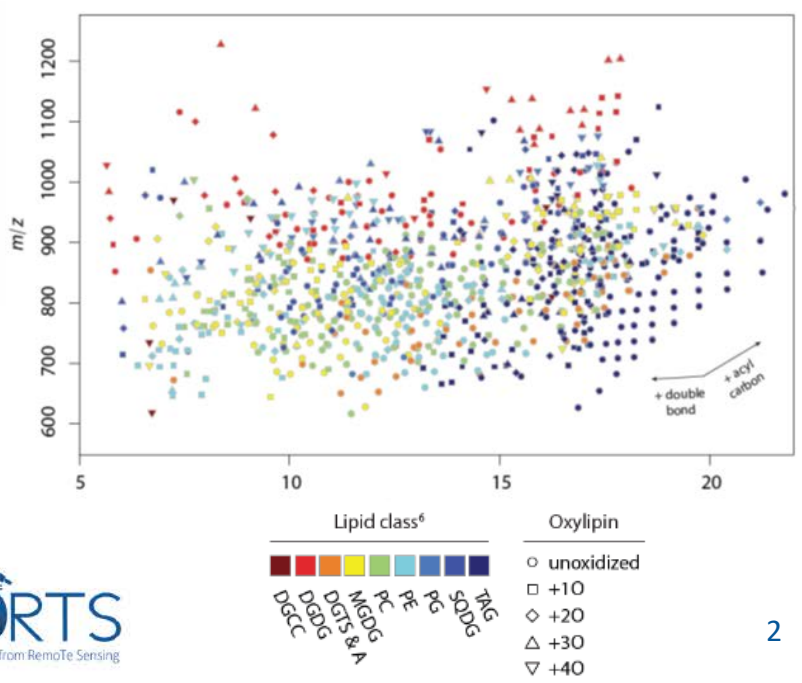
LOGISTICS

- Suspended particles will be obtained from discrete seawater samples by vacuum filtration followed by cryogenic preservation.
- Samples of sinking particles will be obtained from particle interceptor traps (graciously shared by EXPORTS).

MEASURED PARAMETERS

- Lipidomics using high resolution mass spectrometry and LOBSTAHS (Lipid and Oxylipin Biomarker Screening Through Adduct Hierarchy Screening; Collins et al., 2016, *Analytical Chem.)*



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