Phytoplankton community structure, carbon stock, carbon export and carbon flux: What role do diatoms play in the North Pacific and North Atlantic Oceans

SCIENCE GOALS

- Construction of validation data structure for hyperspectral remote sensing phytoplankton functional type (PFT) products
  - Optical
    - phytoplankton absorption
  - Pigments
  - Size distribution
  - Imaging
- Collect underway survey observations for inclusion in the validation data structure
- Link PFT-specific optical properties to biogeochemical properties
- Quantify the contribution of diatom carbon to phytoplankton community stock, export and flux

TEAM MEMBERS

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LOGISTICS

• Survey ship
• Above-water hyperspectral radiometry
• Underway optical/imaging flow-through system (in-line size fractionation)
• Biogeochemical analyses associated size-fractioned discrete samples

MEASURED PARAMETERS

• $E_d(\lambda)$, $L_w(\lambda)$
• $a(\lambda)$, $c(\lambda)$, $b_b(\lambda)$, $F_{ch l}(\lambda)$
• Single cell enumeration, imaging, feature analysis
• Spectrophotometry
• HPLC
• POC