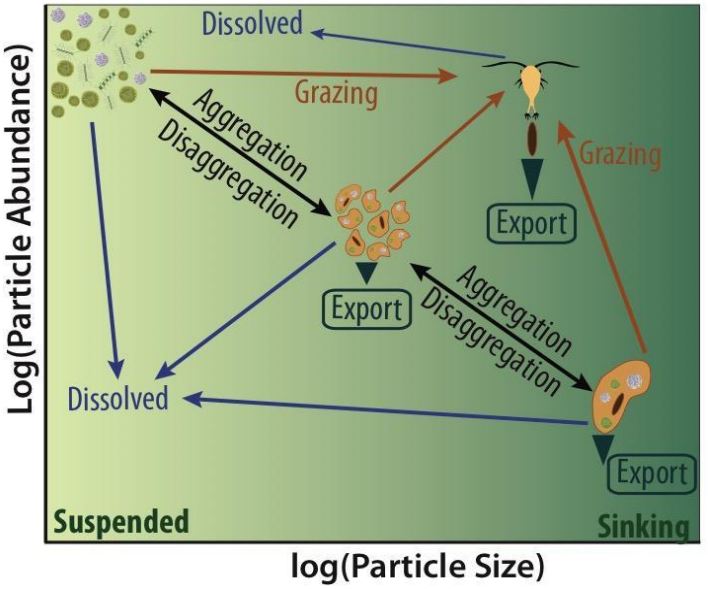
# Synthesizing Optically and Carbon Export-Relevant Particle Size Distributions for EXPORTS

## SCIENCE GOALS

- Measure particle size spectra (PSD) from µm's to cm's (AM)
- Evaluate relationships between optics & PSD (DS, AM & NN)
- Characterize aggregate properties using the Marine Snow Catcher (UP)
- Estimate vertical sinking rate size spectra using trap & PSD obs and 4-D export flux maps (AM & DS)
- Assess aggregate dynamics using coagulation & ecosystem models leading to an inverse model (AB)
- Collect & analyze core hydrographic obs (DS & NN)

## TEAM MEMBERS

- Dave Siegel (UCSB - PI)
- Adrian Burd (UGA - coPI)
- Andrew McDonnell (UAF - coPI)
- Norm Nelson (UCSB – coPI)
- Uta Passow (UCSB - coPI)




EXPORTS
EXport Processes in the Ocean from RemoTe Sensing

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## FIELD MEASUREMENTS

- Measure PSD from ~1.5 µm to 2.5 cm using LISST-Deep & UVP from both ships

  Will also ID & enumerate some zoop ≥ 500 µm

- Collect & characterize intact aggregates with Marine Snow Catcher on process ship

  Separate marine snow, sinking & suspended particles

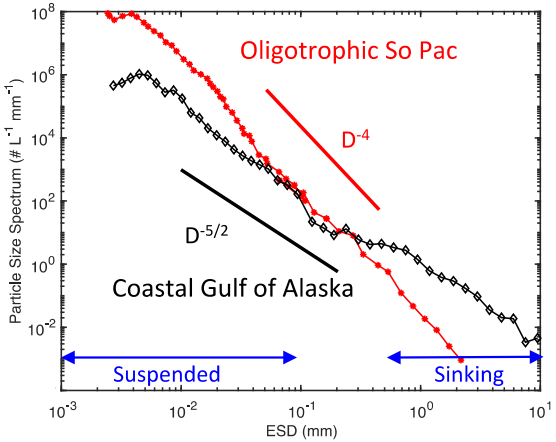
  Characterize by microscopy, chemical assay, physical properties, aggregation rate, etc.

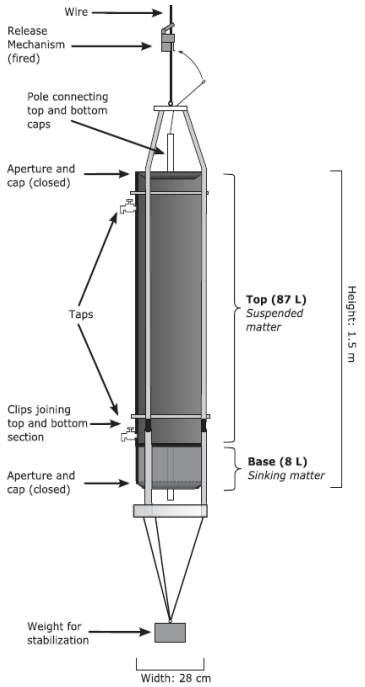
  Experimentally assess aggregate loss rates

- Support the collection & analysis of core oceanographic parameters from both ships

  Nutrients, POC/N, $O_2$, Chl-Fl, HPLC Phyto Pigs, $a_p(\lambda)$, $a_{ph}(\lambda)$, CDOM, BSi, & PIC from selected casts

  Supports the intercalibration of sensor data

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