R/V Sally Ride – draft operations plan 21 Nov 2017

The Ride will operate as a Survey Ship, sampling over a wider range of spatial scales than the Process Ship (R/V Revelle), providing the larger spatial context for measurements on the Revelle and serving as the standard for sensor intercalibration among Ride, Revelle, and autonomous platforms.

Like the Revelle, the Ride will carry out an eight-day sampling plan, which will be repeated three times during the cruise duration. CTD surveys will be interrupted by noon-time optical deployments and **?? hour** over-the-side pumping operations. At least six CTD casts will be dedicated to sensor intercalibration with the underwater glider and Lagrangian float. Three CTD casts will be carried out in close proximity to the Revelle, which will conduct simultaneous CTD casts for sensor intercalibration. Continuous measurements will be made using the ship's seawater system and an optical sensor mounted on the bow (HyperSAS).

The main operations on the Ride are:

- Over the side:
  - CTD survey at both meso scale (likely 50 x 50 km grid) and submesoscale scale (likely 5 x 5 km grid). Exact survey grids TBD.
    - Maximum cast depth with vary between 200 m and 1000 m. One deep cast (2800 m) once during cruise; need to remove 2000 m rated Biospherical PAR sensor)
    - Minimum of six calibration casts for glider (2) and float (4) to intercalibrate sensors. The float or glider will be commanded to surface and remain at surface while ship navigates to autonomous platform location. Ship and float or glider need to be as close as possible (<0.5 km). Autonomous platform will be commanded to descend, while CTD cast commences.
    - Three ship-ship simultaneous CTD casts (early, middle, late in field campaign) for intercalibration of CTD sensors. Ships need to be as close as possible (<1 km).
  - Large volume particle pumping for 6 hours to maximum depth of xx m.
  - Noon time optics deployments: floating radiometer & 200 m profiling optics
- Continuous measurements
  - Ship's pumped uncontaminated seawater for optics and mass spectrometer measurements
  - HyperSAS measurement of sea surface optical reflectance, mounted forward on bow (location TBD)

Instruments on CTD:

- Request freshly calibrated O2 sensor
- Replace ship's optical sensors with PI Seabird/Wetlabs FLNTU (chlorophyll and backscatter) and transmissometer
- Add PI sensors
  - Sequoia LISST & Hydroptic Underwater Vision Profiler - 5
  - PAR sensor