**Plankton Tow Sampling Protocols**

**To fix all plankton tow material**

1. Allow plankton tow material to settle and decant off seawater from top
2. Transfer to collection jar
3. Add 1-ounce buffered formalin (or more if you have a lot of seawater) or add ethanol (solution should be 10% ethanol to seawater)
4. Cap jar, then label jar AND lid
5. Place jar in secondary containment for long term storage

**Genetics – frozen samples**

1. Foram should be alive and healthy looking (good color, active rhizopodia)
2. Identify species and put in petri-dish to rinse briefly in 0.2 micron filtered seawater
3. Photograph if possible
4. Place foraminifer in micropaleoslide or 0.6 ml microcentrifuge vial
5. Label sample
6. Place in -80°C freezer for long term storage (wear gloves, freezer can burn your skin)

**TEM fixation**

1. Foram should be alive and healthy looking (good color, active rhizopodia)
2. Put in filtered seawater to rinse briefly
3. Photograph
4. Take notes in sample intake sheet (species, number of chambers, etc.)
5. Using clean glass Pasteur pipette, transfer foram into TEM fixative (prefill the 0.6 mL microcentrifuge vials)
6. Label vial with sample number from TEM intake sheet
7. Keep at room temperature for 12-24 hours (longer is better)
8. Then, transfer to fridge for long term storage

**RNAlater for microbiome and genotyping**

1. Foram should be alive and healthy looking (good color, active rhizopodia)
2. Process in batches of 6 if possible (use 24-well cell-culture trays). Add filtered SW (0.2 micron) to all cells.
3. Place foram(s) in filtered seawater in individual wells on the left side of the cell-tray
4. Take notes in sample intake sheet (species, number of chambers, etc.)
5. Photograph
6. Clean foram: gently transfer foram from first well column to 2nd, rinse brush in clean water, repeat process (3rd well; then 4th well)
7. Transfer from final cell culture well into 1.5 mL microcentrifuge vial with 100 ul of RNALater or GITC\* buffer (premade) using “chem” labeled sable hair paintbrush. Limit seawater transfer into the fixatives.
8. Label vial with sample number
9. Put in fridge for long term storage

**Samples for shell geochemistry**

1. Pick sample and place in DI
2. If sample was alive, allow time for cytoplasm to extrude from inside shell
3. Rinse sample a few times in buffered DI
4. Put in well slide, let dry
5. Keep at room temp for long term storage

**Background DNA water sampling**

1. Wear gloves (do not contaminate sampling!)
2. Draw water from Niskin© bottle into the cubitainers or brown Nalgene bottles
3. Filter 4L total (2L per filter) as soon as possible with peristaltic pump
4. Mark volume filtered for each filter on datasheet
5. Make sure each filter is empty of excess water
6. Seal one side with male luer lock end, seal the other with hemostatic putty
7. Put in baggy and label with date, cruise, station number, Filter A or B, volume
8. Store in -80°C freezer for long term storage
9. Rinse the tubing, cubitainers, etc. ASAP to prevent bacterial/algal growth
10. Leave tubing hanging to dry between deployments