Fieldwork protocol per sample

Summer 2023

If Ctenophore…

* Mnemiopsis
  + data on site
    - lat/lon and time collected
    - temperature/salinity
    - capture method (bucket/trawl)
    - volume from collection site (in tube without water, put in tube and measure difference)
  + data in lab
    - take some cool pictures for ID and IZ voucher
    - keep 10-15 alive in pseudokriesel
    - volume in lab (in tube without water, put in tube and measure difference)
    - freeze the rest in -80 for sara/other collaborators
    - If feeling frisky try to fix some with formalin and/or rainx
* Pleurobrachia
  + data on site
    - lat/lon and time collected
    - temperature/salinity
    - capture method (bucket/trawl)
    - volume from collection site
  + data in lab
    - take some pictures for ID and IZ voucher
    - keep 10-15 alive in diffusion tube for sara
    - volume in lab
    - freeze the rest in -80 for sara/collaborators
* Other
  + Jaspers Lab
    - Mnemiopsis pop gen?
  + Haddock Lab
    - any non-Mnemiopsis ctenophores for pop gen

If Cyanea…

* Both early and late species
  + data on site
    - lat/lon and time collected
    - temperature/salinity
    - capture method (bucket/trawl)
    - log rough density (for ~10 min count how many you see drift by)
    - collect dna sample of tentacle if not bringing back to lab
    - Morphological measurements
      * note color
      * bell diameter end of lapet to end of lapet
      * bell diameter rhopalia to rhopalia
      * height in middle, mid-bell, and outer bell
      * check for planulae
  + data in lab
    - dna sample of tentacle
    - volume of specimen in lab
    - picture of whole individual
    - picture of radial/coronal/striated muscle
    - collect planulae if possible
    - morphological measurements
      * number of lapets
      * number of clusters of tentacles
      * number of tentacles per cluster
      * number of oral arms
      * manubrium depth if possible
      * bell shape (concave, convex, flat)
      * if possible video of pulsation to measure contraction/relaxation time and frequency
    - If keeping live…
    - if dissecting/freezing/experiments…
      * wet weight
      * wet weight of mesoglea vs other tissues (mainly ratio of oral arm volume : total body volume)
    - if fixing for IZ…
      * wet weight
  + Calculations to do
    - oblate vs prolate also known as fineness ratio (bell height/bell diameter)
    - geomorph for morphology but doesn’t do qualitative or categorical traits well – if picture of flat bell can do landmark to get aspect ratio shape and eventually calculate propulsion efficiency
    - statistical analysis
      * ANOVA for propulsion efficiency and changes in cross sectional diameter during contraction
      * differences between cross sectional samples within species were tested with tukeys honest significant difference test

If Chrysaora…

If other medusozoan…

Other traits previously measured for cyanea

* Morphological
  + central gastric cavity diameter
  + bell thickness at proximal edge of coronal muscle bands (near the origin)
  + oral arm thickened at base (T/F)
  + gastrovascular pits in coronal muscle folds
  + gastrovascular pits in radial muscle folds
  + nematocysts clusters on exumbrella protrude (papillae)
  + number of nematocysts clusters on exumbrealla (papillae)
  + mean number of coronal muscle folds per group (excluding circumbrellar coronal muscles)
  + depth of coronal muscles
  + mean depth of primary marginal clefts
  + mean depth of secondary marginal clefts
  + mean number of radial muscle folds per group
  + tertiary marginal clefts
  + number of tentacle rows
  + number of tentacles
  + number of secondary lobes
  + number of intrusions from gastrovascular sinus into the circular and radial muscle folds
    - shape of intrusions if present
* calculations