Science Questions

Q1 What are the effects of land on nearshore Arctic biogeochemistry?
- How do freshwater carbon, nutrient, and sediment fluxes to the coastal zone change as a result of: changing riverine and groundwater inputs, passage through estuaries and gradients, and coastal erosion and thawing permafrost?
- How do these changing fluxes affect nearshore Arctic biogeochemical and ecological processes?
- How has the relative magnitude of inputs from rivers and coastal erosion changed across the nearshore Arctic seasonally and interannually?

Q2 What are the effects of ice on nearshore Arctic biogeochemistry?
- How does flow alteration and channeling by morphological ice conditions impact terrestrial fluxes into and attenuation within the nearshore Arctic?
- How does the coastal snow/ice cover impact nearshore Arctic biogeochemical processes by controlling rates of mixing and by modulating light availability?
- How does the timing of sea ice formation, retreat, duration of sea ice cover and ablation, snow accumulation, and the morphology of the coastal ice zone influence nearshore Arctic biogeochemical and ecological processes?

Q3 What will be the effects of future change (warming land and melting ice) on nearshore Arctic biogeochemistry?
- On seasonal to interannual time scales, how will changing land (Question 1) and melting ice (Question 2) impact nearshore Arctic biogeochemical and ecological processes?
- On interdecadal time scales, how will changing land (Question 1) and melting ice (Question 2) impact nearshore Arctic biogeochemical and ecological processes?