Highest research priorities for pCO_2:

- Increase wave glider and moored coverage of pCO2 in all regions to understand mechanisms and regional drivers
- Integrate two types of observations (direct flux and pCO2) and use them to validate appropriate model for the application
- Improve multiple mechanistic coastal models with ocean pCO2 and other biogeochemical data
- Improve the integration of satellite measurements into flux synthesis and model development.
- Improve coastal carbon satellite algorithm development
- Improve observations in estuaries and coastal wetlands
- Constrain the near-shore (<30m deep) fluxes and determine if they are consistent with broader coastal fluxes (EPA)
- Propose an enhanced mechanistic observation program on the Great Lakes that can be scaled globally to better model freshwater systems.

What processes will change pCO2 the most going forward?

- Large-scale climate processes (El Nino, NAO, drought, sea level rise)
- pCO_2 in water
  - Water will continue to warm and impact solubility
  - Winds will increase, loss of ice cover (Great Lakes)
  - Loss of ice cover in the Arctic
  - River inputs, relative inputs of nutrient vs. organic and inorganic carbon
  - Buffering changes (changes in Revelle)
  - Changes in total alkalinity inputs
  - How to extreme (hurricanes, floods, etc.) events affect flux
  - The most rapid changes might occur in one of the smallest parts of the budget.
- pCO_2 in the air
  - Increasing CO_2 concentrations from anthropogenic emissions

- Constrain the underlying fluxes in some of the regions, but need to understand the mechanisms that drive spatial and temporal variability in order to improve model prediction and changes to fluxes in the future
- Better integration of researchers for data and model comparison