**Needs assessment**

**Questions to address:**

* What is my personal vision for my classroom?
  + I would like to incorporate some real-world chemistry into the acid/base chemistry unit that draws upon the artic ocean acidification phenomena as it relates to global climate change and in particular arctic sea ice extent. My idea is to draw together some of the concepts of solution chemistry, equilibrium chemistry, and acid/base chemistry through the use of data from research on arctic ocean acidification.
* What are the realities faced in the classroom that may help or hinder my vision?
  + The above concepts in of themselves are complex and time consuming to teach. Trying to integrate them through data to concept methodology will be challenging
* What are realistic ways the experience can be shared with students?
  + Data sets that I have a personal connection with and stories about will draw students into the subject. Making chemistry relate to something real world takes the “as-if-by-magic” away.

**Specific issues to address:**

* Three to five student needs related to specific curricula
  + How is CO2 measured and quantified?
  + What are the instruments that are used to measure ocean CO2?
  + How do those instruments actually work?
  + What are some the reactions that are associated with CO2 in aqueous solutions.
* Three to five changes you would like to make to your teaching methods
  + Incorporate real world application of instrumentation into the science of chemistry.
  + Have student actually make CO2 measurements or at the very least understand how a CO2 measurement is made.
  + Integration of the solution chemistry with acid/base and equilibrium chemistry
* Three to five things you expect to learn during your experience
  + How a ship-board research team works
  + How ocean based instrumentation is deployed, recovered and maintained
  + How ship-board sampling is done
  + How ship-board sample analysis is done.
* Three to five concepts you would like to teach “better” or differently
  + As mentioned previously the concepts of;
    - Solution chemistry (gases specifically)
    - Equilibrium chemistry (aqueous solutions)
    - Acid/base chemistry (as it relates to CO2)
* Equity and expectations related to ethnicity, gender, socioeconomic, and differently-abled students
  + Non identified as of yet.