**Thinking About Data – Tuesday PM Activity Summary**

1. We spent time thinking about how to access and use data effectively, with the goals of considering how the data at hand (or feasible to collect) influences the question(s) you can ask and how to make connections among sampling set-up, data, and question.
2. We used an example of bacterial abundance for the activity, but first we provided a little background:
   1. Of where the samples came from (around Palmer Research Station)
   2. Of how sampling can take place in the ocean (Process of Science video – Sampling).
3. We then worked in partner groups to:
   1. Review and orient ourselves to the dataset provided, by first orienting to what is in your dataset (e.g., what does each column represent)
      1. Dataset 1: Ten samples taken at different depths from the same location on the same day.
      2. Dataset 2: Ten samples taken at the same depth in different years at different locations in the month of January.
      3. Dataset 3: Ten samples taken at the surface over twelve days in different locations.
      4. Dataset 4: Twelve samples taken on the same day, four samples per location from ~33m to the surface.
   2. Consider what these data tell you about the sampling process/how the data were collected,
   3. Recreate the sampling process in a sketch based on what you learned from the data, using blank paper and colored pens (make a drawing of what it looked like in space/time)
4. After the drawings/sketches were complete, we did a Gallery Walk in which everyone was able to review each other’s sampling process sketches. We asked you to consider and comment on:
   1. What is the scope of the inferences you could make from these different datasets?
   2. How does the sampling process influence the questions that can be investigated?
5. For debriefing the activity, we reflected on sketching the sampling process in terms of its ease/difficulty as well as how understanding the sampling process influences your understanding of the data and the scope of possible questions AND conclusions that can be made from the data.
6. We closed this activity thinking about strategies we could use with our students to help visualize the sampling process in order to help them better understand the data they are working with in their investigations.