**Refining Questions – Monday PM Activity Summary**

1. We started with a Think, Pair, Share activity about: What is something about the processing of question development that resonates with you in a new way? Why?
2. On our topic area groups, we explored the chosen data sets more to brainstorm possible questions and begin to refine them into testable questions. The intention was to solidify one question that would be the focus for the group for the remainder of the workshop.
3. We reviewed characteristics of a SMART question before starting:
   * **S**pecific: not too broad - question begins with *How, What, When, Who,* or *Which, (not with why or is)*.
   * **M**easureable: there are datasets available to answer the question - question can’t be answered just by doing reading.
   * **A**chievable: the question can be investigated with data - data are available to, or accessible by you.
   * **R**elevant: who cares and why do they care
   * **T**emporal or Spatially oriented - these comparisons are usually more accessible and informative
4. Mid-way through the activity we came back together to review:

* Differences between science project/concept questions and testable questions.
* Scientists ask why and is in testable questions, but this is hard for students, even undergraduates.
* “Testable question” does not mean experiment with manipulated variable/treatment group. It can be a literature review, looking at someone else’s data, etc.

1. During the debrief we shared our experiences and initial thoughts about the activity, as well as walked through an example of a testable question, the processed data table that would only include the variables and observations necessary to answer the testable question, and a sample visualization of the data to interpret.