1. Variation is everywhere.

2. Some variation can be explained — some cannot.

3. Draw a picture.
   
   You can see a lot just by looking. 
   
   Numerical quantities focus on expected values, graphical summaries on unexpected values. John Tukey

4. A small number of observations, carefully made, can provide much knowledge. A large amount of data, carelessly collected, may be worthless.
   
   You can’t fix by analysis what you bungled by design. 
   
   Light and Willet

5. Cause and effect cannot be established by an observational study. *(Beware the lurking variable.)*

6. Statistical conclusions are based on models that are always approximate and sometimes just plain wrong.
   
   All models are wrong but some are useful. 
   
   George Box
   
   We must be careful not to confuse data with the abstractions we use to analyze them. 
   
   William James
   
   An approximate answer to the right problem is worth a good deal more than an exact answer to the wrong problem. 
   
   John Tukey

7. Conclusions are never certain but we can often say how likely it is that we are wrong.