

Freshwater Ecology Laboratory  
**Hypothesis generation assignment**  
Due 14 September 2018  
20 pts

Once an understanding of the primary literature supporting a project has been completed, you can better formulate some scientific hypotheses regarding your project. Generating hypotheses forces you to focus your ideas and improves your ability to develop effective experimental designs to test your hypotheses.

Our project will focus on the aquatic ecology of depressions left by overturned trees and their root masses. Specifically, we will be testing whether depressions outside of the stream channel differ ecologically from the main stream channel. The primary focal point will be examining changes in cellulose decomposition (i.e., mass loss) in each habitat, which can be a result of either physical or biological factors. One key biological factor affecting mass loss is activity of benthic macroinvertebrates, and we will measure colonization of cellulose by macroinvertebrates. You need to develop **seven scientific hypotheses** specifically described below regarding this topic.

- First, write two unique hypotheses for mass loss focused on abiotic factors influencing potential differences between the habitats. You will need to describe how each specific habitat will differ and why.
- Second, write two unique hypotheses for mass loss focused on biological factors influencing potential differences between the habitats.
- Third, write one more hypothesis about a specific characteristic of the invertebrates that you expect to colonize cellulose placed in each type of habitat. For example, would one habitat have organisms with certain relevant traits that the other habitat does not have?
- Fourth, write two additional hypotheses of your own with respect to potential differences between the habitats, which can be about anything related to the project that you think is interesting, but is not touched upon in your hypotheses above.

The format for each hypothesis will require both a prediction and why you think this prediction makes sense. In other words, **hypotheses are predictions with stated causal mechanisms**, not just predictions. Type your hypotheses and turn them by the due date. Like last time, complete this assignment independent of others. I only need a printed copy.