BIOL933: Design, Analysis, and Interpretation of Experiments

Student presentations

This course has been structured in such a way that the last couple of weeks of the semester are dedicated to giving you the chance to apply the concepts we have covered to your own research endeavors...and to get feedback. Specifically, you have an opportunity (totally voluntary) to present your research question(s) and methodolog(ies) to the class for critical discussion, using the following as a guide:

To avail yourself of the chance to have 26 well-informed brains thinking all about YOU...

Prepare a 15-20 minute presentation for the class in which you lay out the following:

a. A clear statement of your overall research objective (i.e. context), including whatever background is necessary to understand this objective (remember, we all study different things!)
b. A clear statement of the objective (hypothesis + scope) of *your specific experiment*
c. A clear explanation of your proposed Experimental Design, including the following specifics taken from Lecture 2:

> **Experimental Design:** The logical structure of an experiment.
>
> 1. **Treatment structure**
>   The set of treatments used and how they relate to one another.
> 2. **Treatment replication**
>   The number of experimental units to be subjected to each treatment.
> 3. **Design structure**
>   The manner in which treatments are assigned to experimental units.
> 4. **Response structure**
>   The set of response variables to be measured and the sampling plan that specifies when, where, and with what components of the experimental unit one will measure those response variables.
> 5. **Error control**
>   "Noise" reduction through the strategic use of blocking techniques, covariables, or environmental controls (e.g. growth chambers, greenhouses, lab studies).

d. Any experimental design, analysis, or interpretation questions you are currently struggling with. If you have actual data, all the better.

Each presentation will be followed by 10-15 minutes of lively Q&A and discussion.

NOTE: *With 3 lectures and 1 lab set aside for these presentations, we can accommodate up to 12 people, a little less than half the class. This is by design, as not all of you are into your research yet. Even if you're not ready to present, you will glean a lot from these discussions; and your presence (and active involvement) is required (I'll be taking roll!).*