

# Proposal for Experiment

## Guidelines for Poster

### CSS 590

Students are required to submit a proposal for a valid experiment in a field of interest. The experiment may be part of, or related to the student's thesis, but should be a project that is still in the design stage. Although this course emphasizes field plot technique, you may choose to use animals if that is your area of interest. In that case, some of the details of the sections below should be modified to fit your type of experiment. The proposal should be printed on plain paper and pasted on a poster board for exhibit in class on **Monday, March 12<sup>th</sup>, 2007**. Other poster formats may also be used, but your grade will be based on the content, not the appearance of your poster. A copy of the contents of the proposal should also be submitted to the instructor. Each student will review and critique at least four posters prepared by other students. The proposal should use the style of scientific writing appropriate for your discipline and should contain the following sections:

#### ***Definition of the problem***

Briefly define the problem under investigation. Discuss previous research done in this area to give a sense of background and why this research would be important. This should NOT be an exhaustive literature review. Cite no more than 3 or 4 other research papers that may lay the groundwork for your proposed experiment. Put those references in a bibliography at the end of the poster.

#### ***Statement of objectives***

In bulleted form, list the objectives of your experiment in priority order with the most important listed first.

#### ***Selection of treatments and variables to be measured***

Identify the experimental material and the treatments that you propose for this experiment. List the data to be collected and the responses to be measured. Justify the selection of experimental material and treatments in terms of your stated objectives.

#### ***Identification of experimental site(s)***

Describe the site where the experiment will be conducted including any land features and information about soils, fertility, and previous crop history if known.

#### ***Choice of experimental design***

Select an experimental design that best fits your objectives and give your reasons for your choice. Draw a site plan to identify randomization and placement of plots and blocks (if used). Define the number of replications and the plot size that will be required to give you a power of the test that will satisfy your objectives. If appropriate, identify treatment comparisons that you wish to make.

#### ***Control of experimental error***

Itemize any measures that you will use to minimize experimental error including border effects, if applicable. For each trait to be measured, identify an acceptable range of response data.

#### ***Outline of statistical analysis***

Present an outline of the appropriate ANOVA for your chosen design identifying sources of variation and degrees of freedom. List any other statistical tests that you plan to perform on the data as well as any appropriate contrasts.

#### ***Construction of timeline and estimation of costs***

Project a timeline that will identify important stages in the process, estimating the time and resources (additional labor) that may be required. To the best of your ability, estimate any monetary costs of the experiment.

#### ***Conclusion***

Recap the contributions that this experiment will make to the body of knowledge in your chosen field.