ABT 301
Formats for Research Proposal and Oral Presentations

RESEARCH PROPOSAL FORMAT

I. **Project Title**

Use a concise title that clearly describes the main focus of the project or activity.

II. **Pertinent Student Information**

Type your name, address, phone number, e-mail, and expected date (semester and year) of graduation. ***Sign*** *the proposal below this information.*

III. **Name of Faculty Member Who Will Supervise the Activity**

Also obtain the ***signature*** *of your* ***faculty research mentor*** *on the final draft of the proposal.*

IV. **Statement of Career Goals**

Provide an indication of what you hope to accomplish during your career and in what type(s) of employment you hope to work.

NOTE: Items I-IV must appear on the cover page of the proposal. See page 4 for a Sample Cover Sheet

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V. **Proposal Summary** (Limit 200 words)

Summarize the project, including the main goals and the activities planned to achieve the stated goals. This should also briefly describe the potential impact and utility of the anticipated results.

VI. **Introduction and Significance**

a. Background on the system. Include a concise but well-developed literature review that cites relevant material. It is expected that most of this material will be gleaned from the peer-reviewed primary scientific literature.

b. Central (i.e., major) question being addressed. Explain how the present state of knowledge does not provide adequate information needed for a given problem and state what types of specific information are needed to advance the field of inquiry.

c. Working hypothesis(es) and/or goals of the work. Explicitly state the specific hypothesis being tested and/or goals that will be addressed by the proposed work.

VII. **Methods**

a. Experimental rationale. Re-state the reasons and motivations for the proposed work and describe the overall strategies and techniques that will be brought to bear on the questions posed in Section VI.

b. Description of experiments. Provide a basic outline for the experimental work that is planned. This should be done in a chronological fashion and with enough detail that the reader can understand the work beingperformed and why specific techniques are being employed.

c. Description of controls. For projects that compare different treatments or scenarios, clearly state the controls that will be used and why these are appropriate within the context of the planned work.

VIII. **Anticipated Results, Interpretation, and Implications**

a. What are the expected results? Based on the hypothesis or goals of the project, describe the types of results that might be reasonably anticipated as an outcome of the work.

b. Analysis of data. Describe how the raw data collected will be transformed and analyzed. Include statistical analyses, bioinformatic manipulations, etc.

c. Support of hypothesis. State how specific results would either support or refute the original hypothesis.

d. Potential implications. Summarize how the results would add to the knowledge base of the research area, especially in the context of the questions and hypotheses that were posed in Section VI. In addition, provide the broader potential applications of the research findings.

IX. **Timetable**

Provide an approximate timetable of activities related to the execution of the proposed work. This must be a detailed description that goes beyond a simple one sentence summary statement. You may choose to use a table or text, but in either case there must be a detailed description of project activities and timeframes. A Gantt chart works best for this.

X. **Potential Limitations and Solutions**

a. What are the potential problems that might be encountered during the execution of the techniques? Describe the problems that could reasonably be expected to occur from the methods and techniques that will be used to perform the work. *Also,* describe *alternative* techniques that could be employed to circumvent such problems.

b. What are the potential limitations imposed by the experimental design and/or resources? Describe factors inherent in the experimental design or general approaches being employed that limit the type and extent of data that will be collected. How will this potentially limit the information, interpretations, and conclusions that can be drawn from the work described?

Do not make statements such as "I may not have enough time to complete the work"; this is *not* a reasonable limitation.

XI. **Literature Cited.**

Provide complete citations including all authors, year, complete title, journal or book chapter, volume, inclusive page numbers, publisher (for books), city of publication (for books). The format must follow a standard for a journal that requires all of the above information. The citation format for Chemical Abstracts is a good model.

*NOTE: The limit for items VI-X is **ten** pages. The entire document must be typed, **double**-spaced, 12 point font, and 1" margins on all sides. Pages should be consecutively numbered at the bottom center of each page.*

Submission Guidelines

Submit the ***First Draft*** of your proposal in ***triplicate*** (paper version) to the instructor by the due date indicated in the course Syllabus. Your proposal will be reviewed by two of your peers, and the reviews will be given to you at least two weeks prior to the submission deadline for the Final Version.

Submit ***one copy*** of the ***Final Version*** of your proposal by the due date indicated in the course Syllabus. The final proposal (paper version) must be given to the ABT 301 instructor in the instructor's office at the time of the final examination.

The Final Version of the proposal will not be accepted late.

Agricultural Biotechnology Research Proposal
**SAMPLE* PROPOSAL COVER SHEET*

I. Project Title: Influence of Hydrogen Concentration on the Degradation of Cellulose by *Clostridium thermocellum* strain JW20

II. Name: Herbert Strobel
Address: 212 Garrigus Building, University of Kentucky
e-mail: strobel@uky.edu
Graduation Date: May, 2010

Signature: _____

III. Faculty Advisor: Dr. Joe Glotzmeir, Department of Anatomy, UK

I agree to supervise the proposed activity:

Signature: _____

IV. Statement of Career Goals:

I want to be a scientist in a company.

ORAL PRESENTATIONS

Research Project Proposal Presentations

In addition to writing a formal research proposal on the project you plan to conduct for ABT 395, you will make an oral presentation based on your research proposal. The general format is outlined below. If you have already collected experimental results, you may present selected data, ***but this should be kept to a minimum.*** Research results will be presented at the end of your ABT 395 project and the ABT 301 oral presentation is *not* the appropriate forum to present such results. Instead, your ABT 301 oral presentation should focus on your proposed work (*even if you have already started your laboratory project*).

ORAL PRESENTATION
RESEARCH PROPOSAL FORMAT

General Outline

Introduction and Significance

Briefly describe the general field of study and then the specific area of research. Include relevant material that is needed to understand the model system and experiments that will be described.

Hypothesis and/or Goals

Explain how the present state of knowledge is not adequate for a given problem and state what types of specific information are needed to advance the field of inquiry.

Explicitly state the specific hypothesis being tested and/or goals that will be addressed by the proposed work.

Methods

Overview. Restate the reasons and motivations for the proposed work and describe the overall strategies and techniques that will be brought to bear on the questions posed in the introduction.

Description of experiments. Provide a basic outline for the experimental work that is planned. This should be done in chronological fashion and with enough detail that the reader can understand the work being performed and why specific techniques are being employed.

Description of controls. For projects that compare different treatments or scenarios, clearly state the controls that will be used and why these are appropriate for the experiments planned.

Anticipated Results, Interpretation, Potential Limitations and Alternatives, Implications

What are the expected results? Based on the hypothesis or goals of the project, describe the types of results that might be reasonably anticipated as an outcome of the work.

Analysis of data. Describe how the raw data collected will be transformed and analyzed. Include statistical analyses, bioinformatic manipulations, etc.

Support of hypothesis. State how specific results would either support or refute the original hypothesis.

Potential Limitations and Alternatives. Describe the problems that could reasonably be expected to occur from the methods and techniques that will be used to perform the work. *Also,* describe *alternative* techniques that could be employed to circumvent such problems. Describe factors inherent in the experimental design or general approaches being employed that limit the type and extent of data that will be collected. How will this potentially limit the information, interpretations, and conclusions that can be drawn from the work described?

Implications. Summarize how the results would add to the knowledge base of the research area, especially in the context of the questions and hypotheses that were posed in the introduction section. In addition, provide the broader potential applications of the research findings.

Summary

Single slide that highlights the major points from each of the previous sections.

Oral presentations should be structured to last approximately 15 minutes. A brief question and answer period will follow.