Research Plan and Abstract Defined

Research Plan Defined

A Research Plan is written or outlined **BEFORE** the start of an experiment. It states the method or steps that **will be used** in the experimental research. Thus, the method is written in the **FUTURE TENSE**. It needs approval **PRIOR** to the actual start of the experiment by the Sponsor, SRC, or IRB where applicable. Remember, this is **NOT** the actual science project report. This is only the plan that will be followed.

The research plan should be redefined once definite details have been established.

Remember: This is the Research Plan and NOT the Science Project Report

- **Send only** what the research plan is asking for (no title page, acknowledgements)
- Should **NOT** have data, and/or conclusion.
- Should **NOT** be written in the past tense.

Components of a Research Plan: Follow the format on the Research Plan Attachment, **p. 30.** by writing. The Research Plan should be typed and not hand-written.

Example:

A. **Question or Problem** (statement stated as a question leading to the study)

B. **Goal/expected outcome/hypothesis** (state the purpose, objective, or engineering goal) Hypothesis should follow the problem, purpose, etc. It is a temporary answer, prediction, educated guess.
Stay away from "I think that..." It should be direct and not wordy and not in first person
It should relate to the problem or the question.

C. **Method or Procedure**
- Measurements should be in metric units.
- Include concentrations, quantities, and instruments or major equipment used.
- If applicable, include a copy of surveys, questionnaires, or test administered.
- Mention safety or sterilization procedures when necessary.
- If working with bacteria or fungi, mention where they will be collected or ordered from, cultured and observed, and how samples will be disposed.
- Indicate supervision when there should be supervision.
- If working with Human Subjects, how are their rights, welfare, and identification being protected?
- Justify the use of nonhuman vertebrate animals.
- Stay away from personal pronouns: "I will...We will...Next I will...etc."
- It is best to start with ACTION words, "Measure 3.5 ml of water and..." or "3.5 ml of water will be measured and transferred to a..."

D. **Bibliography** (List of references or literary resources)
- Submit at least 5 major references when submitting the plan for approval.
- Use science journal, books, reliable Internet sites, **NOT** just Internet sources.
- Follow a **proper bibliography format** for journals, books, Internet sites, etc. Select one style and use it consistently. http://easybib.com may be helpful.
- One of the 5 resources for vertebrate animals, must include an animal care reference

Abstract Defined

An Abstract is written **AFTER** the completion of the experiment and a conclusion has been made based on the data obtained. It is a short summary of the experiment. Send the Official Abstract and Certification Form with the necessary SRC forms. Create a Word document, then copy and paste it in to the official form.

The actual form is found on the Science Service website, www.societyforscience.org/isef under Intel International Science and Engineering Fair. Click on the Wizard (within text) and follow the instructions. Keep clicking "*next page*" until you come to the end. Click on ***Abstract***. Fill-out the form and proof-read carefully before printing. It cannot be saved unless you have a full Acrobat Program. Teachers can also make a photocopy of the template. Student can then print their abstract on the template.

The Official Abstract and Certification Form should filled-out as follows:

- Must be **250 words or less**.
- Single-spaced using an 11 or 12 pt. type font and written in the **PAST TENSE**. Should not be hand-written.
- **Header Box** (top box): Type the title of the project followed by the student's name on the second line. The school name, city, and state go on the third line. Team projects need all team members' name.
- **Body Box:** Start one space under Header. Student may or may not leave a blank space within paragraphs. Start the body beginning at the left margin. The body should include a brief Introduction (purpose, problem, engineering goal and hypothesis), a brief procedure (main steps), results (discussion of data) and a conclusion. It may include a practical application of the study. Remember, the body is written in the **PAST TENSE**!!!
- **Category**: "**X**" the category on the right side column of the form.
- **Questions:** Answer the **5** questions below the body box where applicable.
- **Signature & Date:** To be done by the **STUDENT OR STUDENT LEADER** and dated **AFTER** the completion of the study.

IN THE ABSTRACT: **(**Please read carefully)

- **DO NOT** mention names of individuals, institutions, or companies that assisted with the project.
- **DO NOT** list patent pending, awards, or endorsements in the abstract
- **DO NOT** staple, tape or glue a copy of the abstract onto the Official Abstract Form.
- **DO NOT** describe previous year's work. (exception-longitudinal study)

NOTE: The official abstract is the **ONLY** Abstract that can be posted at the exhibit