

ELEMENTARY AND JUNIOR PROJECTS
Research Plan
REQUIRED for JUNIOR projects competing in the NIRSEF
A research plan must accompany Student Project Form (1A)
Additional pages may be attached

Student Name(s): _____
(if Team Project, include all Team Member Names)

Complete (print neatly or type) and attach to Student Project Form (1A).

The research plan is to include the following:

A. Question being addressed

B. Hypothesis/Problem/Engineering Goals

C. Description in detail of methods or procedures used or activities you wish subjects to do

(including concentrations and amounts used). Refer to the NIRSEF Rules and Guidelines for Elementary and Junior Projects for more information. For greater detail, you might also wish to consult the ISEF website at: www.sciserv.org/isef/document

1. For human studies you should:

- a. include surveys or questionnaires, if used;
- b. critically evaluate the risk to the subject being studied (including the subject's anonymity);
- c. provide the document you intend to use that states that the study is voluntary and that study subjects may opt out at any time of the study.
- d. submit all documents to the school Institutional Research Board (IRB) **prior to** experimentation for approval.

2. Vertebrate animal research is not allowed at the elementary and junior levels. Students who wish to do animal research should use invertebrates (insects, crayfish, etc.). Include the following information:

- a. present justification for use of animals in your research including number of animals you wish to use;
- b. establish a care plan including their feeding and housing and how you intend to implement the plan;
- c. detail your plans for the animal(s) at the end of your project.

3. Research using hazardous biological materials is discouraged at the elementary and junior levels. If plans for studying biological materials are intended, you must:

- a. complete all research in an appropriate lab environment;
- b. with the aid of the Qualified Scientist, assess biosafety level, and develop a plan for safe handling and disposal according to the laboratory guidelines.

4. For research using hazardous chemicals, activities and devices that are permitted, you should

- a. describe all concentrations and amounts;
- b. describe all safety precautions and procedures to minimize risk;
- c. describe disposal methods.

D. Bibliography

List at least *three* major references (*e.g.*, science journal articles, books, internet sites) from your library research.