

Juniors Research Proposal Template - Applied Physics

Margin and Format Requirements (5 pts)

Set your paper size for US letter (8½" X 11") with at least one-inch margins in all directions. Use a standard 10 to 12-point typeface. A font size of fewer than 10 points may be used for mathematical formulas or equations, figures, table or diagram captions, and when using a Symbol font to insert Greek letters or special characters. Your proposal cannot be longer than 10 pages (not including references) and must include the following sections:

1. Cover sheet (10 pts)

- a. Name
- b. Title: The title page provides the first impression for your audience of your proposal. Be sure that the title gives a glimpse of the nature of the proposed investigation and includes the key ideas. The project title should provide a brief description of the research focus. Be specific (e.g. "The effects of extreme temperatures on growth and survival in *C. Elegans*")
- c. Time frame
- d. Supporting agency (PRISMS)
- e. Research lab

2. Project Summary (10 pts) - 1-page summary based on spring research proposal

3. Table of Contents (5 pts) - All major and minor sections listed must be included

4. Project Description

- a. **Project Goals and Significance (20 pts)** - This section must explain the desired outcomes and significance of your proposed project. In essence, you are explaining what you hope to accomplish and why anyone should care. In answering these questions, a brief introduction should be provided to your topic that makes it clear how your project is developing knowledge in the field and/or leading to a new technology/application of existing knowledge.
- b. **Methodology (30 pts)** - This section must explain how you plan on accomplishing the previously stated goals of your research. What materials, tools and equipment are needed to construct anything needed to support your research? Think of alternative solutions to your design problem in case you come across any shortcomings in pursuing your goal. What experiments will be conducted and what variables will be measured? What techniques/technologies/procedures will you use and how exactly will they contribute to the goals of this project? Is there reason to think that this methodology will be successful based on previous research?
- c. **Approximate Goals and Milestones (20 pts)** - This section must discuss the milestones and intermediate goals that must be achieved on the way to the ultimate goal of the project. An approximate timeline of your project should be

included. When will instruments and/or reagents be obtained and validated? When will experiments be conducted? Think of a target goal for completion of the project, as well as additional work you can do in case you finish your target goal ahead of schedule.

- 5. References Cited (10 pts)** - Reference information is required. Use <http://www.sciencedirect.com/> and other databases to search for papers. You should focus mainly on the recent peer-reviewed literature (post-1990; though of course, you may use older sources). References must be formatted in the PRISMS style (prisms.ind.opalsinfo.net/bin/pf/pfList).

You can simplify your life if you use a reference manager such as [Mendeley](http://www.Mendeley.com), and install the PRISM style to automatically format your bibliography. Use the Mendeley [plugin for MS Office or Libre Office](#) (free analog of MS Office) to insert citations and a bibliography section (just press Insert Bibliography and it will do it for you).

To install Mendeley (www.Mendeley.com)

1. Create an account
 2. [Install desktop app.](#)
 3. Install [browser import plugin](#)
 4. You should choose your style.
 5. Please install prisms style:
 - Mendeley Desktop – View – Citation Style – More styles – Get more Styles – Download Style – use link <http://cs1.mendeley.com/styles/476878581/prisms> - Download Button - Click.
- 6. Biographical Sketch(es) (5 pts)**
- a. Please list relevant academic classes you took, summer schools, internships, or other activities, which may support your claim in ability to achieve a reasonable outcome while doing research in the chosen area
 - b. Please list any relevant scientific awards or summer research experience
 - c. Do not submit personal information such as home address; phone number; e-mail address; date of birth; citizenship; driver's license numbers; marital status; personal hobbies; and the like.
 - d. Please include a short bio of senior researchers supporting the project (your lab director, other PRISMS researchers involved in this project, and external researchers involved in this project).
 - e. Please include information about the expertise of other internal or external collaborators (for example other students working with you in a group).
- 7. Facilities, Equipment, and Other Resources (10 pts)**
- a. Please list the equipment/facilities you are going to use, available at PRISMS.

- b. For each item clearly state if the use of equipment requires some consumable parts to operate. Roughly estimate the time you need this equipment for. Clearly state if there are other researchers (students) who will use the same equipment limiting your time of access.
- c. List and do the same estimation for externally available equipment (like [Imaging and Analysis Center at Princeton University](#)).
- d. List and do the same estimation for equipment you would like to have access to, but PRISMS does not have it now. How critical is access to this equipment?

8. **Budget and Budget Justification (20 pts)** - You must provide a budget and justification with estimated costs to complete the project. You should include all expendable materials and supplies required in the table below, and list the total amount requested.

Item Description	Supplier	Unit Cost	Quantity	Estimated Cost

9. **Current & Pending Support (5 pts)** - List and describe potential sources of support including contact information. This includes any financial support as well as collaborations and expertise support.

Section	Pts Possible	Pts Received
Project Title & Cover page	10	
Project Summary	10	
Table of Contents	5	
Project Goals and Significance	20	
Methodology	30	
Goals and Milestones	20	
Biographical Sketch	5	
References	10	
Facilities, Equipment, Resources	10	
Budget	20	
Support	5	
Format	5	

Grade ____/150