

**University of Maryland School of Medicine
Office of Student Research**

Proposed Research Initiated by Students and Mentors (PRISM) Program

Research Plan Instructions

All PRISM students must submit a Research Plan describing the hypothesis-driven research project they plan to conduct during the 9 weeks committed to the program in the summer. Submit the research plan in an MS Word file. In addition to the research plan content, submit a copy of the approval letter(s) for any relevant IRB or IACUC protocol(s) and if applicable, documentation that you have been added to the protocol(s).

1. The Research Plan should describe a realistic, well thought-out research project of short duration formulated by a medical student in close collaboration with a faculty mentor.
2. The Research Plan should demonstrate that the applicant has a firm understanding of the project and the procedures.

General

Organization and Format

1. Organize the content of the Research Plan to answer the following.
 - i. What do you intend to do?
 - ii. Why is the work important?
 - iii. What has already been done?
 - iv. How are you going to do the work?
 - v. What kinds of results will you expect?
 - vi. What might those results suggest?
2. For the abstract and the body of the research plan, use font size equivalent to 11 point Arial or 12 point Times New Roman, single spaced.

Readers may not be familiar with the area of the proposed research. Communicate clearly and concisely, avoid jargon, and introduce any abbreviated term or acronym with the full term before using the abbreviation.

Basic Information. Include the following on the cover page or on the first page of the research plan before the abstract:

- Student name
- Faculty mentor(s) name and department, and division if applicable
- Title of the research project
- Site or location where the research will be performed

Abstract. Begin the Research Plan with an abstract that summarizes the entire Research Plan. Briefly describe in a single paragraph (1) the nature of your research project and (2) the nature of your participation in that project.

Body of Research Plan

Follow the directions for each section as outlined below. The body of the Research Plan (not including appendixes), sections A through E, is recommended to not exceed a total of 6 pages.

- A. Specific aims.** State concisely and realistically what the research project is intended to accomplish. What hypotheses are to be tested or what questions will be asked? Be sure to emphasize your role in the project.
(Recommended 0.5 page maximum.)
- B. Background and Significance.** Briefly summarize the scientific background to the proposal. Critically evaluate existing knowledge, and specifically identify gaps that the project is intended to fill. Literature cited should be current and relevant, rather than exhaustive. Be sure to indicate how the specific aims were derived from the background. State concisely the importance of the research described, and the broad, practical implications of the work.
(Recommended 1 to 1.5 pages.)
- C. Progress Report/Preliminary Studies.** Include preliminary work (optional) where relevant in this section (*e.g.*, library research, methodological development, and procurement of supplies). The information in this section will serve to aid the reviewers in determining the feasibility of the proposed project.
(Recommended 1 page maximum.)
- D. Methods or Approach.** Discuss the experimental design and procedures to be used to accomplish the specific aims. Describe the protocols to be used, and the tentative sequence and timetable of the investigation. Be as specific as you can regarding the nature and number of subjects or samples you plan to study. Include the means by which the data will be analyzed and interpreted. Emphasize your role in this phase of the project and provide a timetable for accomplishing your work.
- 1) For **clinical research**, please include the following:
 - a. **Study Design** - *e.g.*, prospective cohort study, randomized controlled trial, case-control.
 - b. **Study Setting**
 - c. **Study Participants** - Include description of participant selection as well as inclusion and exclusion criteria.
 - d. **Study Interventions/Exposures**
 - e. **Study Procedures (including data collection methods)**
 - f. **Analysis Plan**
 - g. **Discussion of Power and Anticipated Sample Size** - Formal power calculations may not be necessary, particularly for pilot studies. However, some discussion regarding anticipated sample size and the feasibility of enrolling should be included.
 - 2) **Anticipated results and Potential Pitfalls** – Discuss potential problems and include possible alternative strategies if needed.
- E. Literature Cited.** Appropriate references should appear as consecutively numbered citations in the text rather than alphabetical. Each citation must include the names of all authors, title of article, the name of the journal or book, year of publication, volume number, and beginning and ending page numbers for articles, chapters, or sections of books.

Appendix

Include any applicable charts and graphs. Clearly label them and refer to them in sections A-E where appropriate.