

## Prism adaptation research proposal

Tomorrow we will use the research proposals that you write for this homework and run a study section: “The study section is the panel of scientists who review a group of similarly-themed grant applications for the NIH. This is the initial (and some might say most important) level of review of the merit of a proposal. A typical study section might be 20-30 scientists who meet in person, traditionally in Washington DC or Bethesda, for 2-3 days to discuss applications. There are variants, however, including larger panels, longer meetings and even very small focused panels of ~3-8 reviewers who only discuss applications by conference call” ([nih.org](http://nih.org)).

Please choose one of your hypothesis and fill the attached rubric with all the pertinent details, respecting the length limits. The purpose of the study section is to decide which research proposal will receive funding. To remove biases, your research proposal will be assigned for initial review and presentation to somebody else, so please ensure to keep your anonymity by not marking the proposal with your name and using Arial font 12 single space. This assignment has to be turned in before 8 am on Thursday January 17th so that I have the chance to print every research proposal before class.

The research proposal must include all of the following sections:

1. Purpose: What do you intend to do?
2. Relevance: Why is this worth doing or how is it innovative? What will this new work add to the field or to you personally?
3. Hypothesis: What do you intend to test specifically?
4. Experimental protocol: How will the research be accomplished? Who? What? When? Where? Why?
5. Expectations: What kind of data would the experiments produce? How would this data relate to the hypothesis?

The judging criteria (as per NIH policies) will be:

1. **Significance**: Does the project address an important problem or a critical barrier to progress in the field? Is there a strong scientific premise for the project? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

2. Innovation. Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?
3. Approach. Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Have the investigators presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed? Have the investigators presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects? If the project involves clinical research, are the plans for 1) protection of human subjects from research risks, and 2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?

Note that an application does not need to be strong in all categories to be judged likely to have major scientific impact. For example, a project that by its nature is not innovative may be essential to advance a field.

Writing tips:

TIP #1: Make Your Project's Goals Realistic: Don't propose more work than can be reasonably done during the proposed project period.

TIP #2: Be Organized and Logical: Why? Reviewers are accustomed to finding information in specific sections of the application. This creates an efficient evaluation process and saves reviewers from hunting for required information

TIP #3: Write in Clear Concise Language: Why? A reviewer must often read 10-15 applications in great detail so your application has a better chance of being successful if it is easy-to-read and well-written.

TIP #4: Sell Your Idea on Paper: Capture the reviewers' attention by making the case for why NIH should fund your research!