***Bioinformatics and Computational Biology Laboratory at the University of Idaho***

**Statement of the Problem**

This section should include a clear and concise statement of the purpose or goal of the project. In a grant proposal, it consists of (1) the specific question(s) to be answered, (2) a brief explanation of the need for or significance of the study, and (3) an explanation of how the results will contribute to the existing body of knowledge. In a response to an RFP, this section consists of the offerer's interpretation of the government's requirements. Proposals that restate or paraphrase the RFP suggest that the offerer has not really thought much about the issues.

**Literature Review**

A proposal should reflect the offerer's understanding of relevant bodies of literature and where his/her study fits in that context. This section need not be lengthy, however it should be comprehensive. It should trace the central themes in the literature, highlight major areas of disagreement, and reflect a critical stance toward the materials reviewed. Citing weak research or poorly articulated theory does not help. RFP's frequently contain hints or directions for the literature review. Grant announcements usually do not, so offerers have considerable autonomy in identifying relevant bodies of literature. That autonomy requires careful thought and creativity in identifying appropriate sources.

**Conceptual Framework**

In this section, the offerer provides his/her own perspective. What theories or concepts will guide the study? How or why do they suggest the specific hypotheses or research questions? What are the strengths and weaknesses of the proposed framework? RFP's sometimes specify a particular theoretical perspective that should guide the study. If so, the proposal should contain clear evidence that the offerer understands the theoretical perspective and can work with it. Grant programs usually do not specify a conceptual orientation.

**Hypotheses or Research Questions**

Following the description of the conceptual framework, there should be a clear, crisp statement of the research hypotheses, or, in the case of some qualitative studies, a concise description of the phenomena to be examined. Depending on the requirements of the solicitation, the hypotheses may be stated informally or formally. Finally, an explanation of why testing the hypotheses or answering the questions is appropriate for elucidating the research problems and is consistent with the conceptual framework should be included.

**Methodology**

This section consists of a description of plans for collecting and analyzing the data. What instruments will be used? Why are they appropriate for this study? Is there evidence of the instruments' reliability and validity? How and to whom will they be administered? What procedures will be followed in the data analysis? For qualitative studies, there should be an explanation of the purpose of observations and interviews, and, if possible, some indication of their content and format. The description of the proposed methodology should contain enough detail to indicate that the offerer knows what he/she is doing. Proposals that include the formula for a statistical test as the only information about plans for data analysis don't lend confidence that the study will yield robust findings or rich insights. Similarly, proposals that simply offer to use the newest research procedures may suggest that the investigator is attentive or attracted to fads, but may not be familiar with that particular research approach.

**Task Structure (Scope of Work)**

This section indicates exactly what will be done, the sequence of the various activities, and the products of deliverables that will be prepared. RFP's specify the tasks, deliverables, and schedule in some detail, although there is usually some latitude for offerers. In preparing grant proposals, there is more freedom to define the tasks. In both cases, it is important that the proposed task structure includes all of the activities necessary for completing the project. Planning a viable schedule for carrying out the tasks is often as important as developing a comprehensive list of tasks.

**Management Plan**

A crucial part of the plan is a creative and effective approach to project management. The approach should indicate who will be responsible for each part of the work, and who will be responsible for overall coordination. The management plan should also be carefully tailored to the unique nature of the individual project.

**Staff and Institutional Qualifications**

This section includes a full discussion of the qualifications and experience of the proposed staff. Sometimes it is useful to include brief summaries of the staff experience in the management plan and to attach complete resumes for each member of the team as appendices to the proposal. This information is essential should be presented in a way that demonstrates that the staff has the necessary qualifications and experience to conduct the research. This section should also include complete information about the relevant qualifications of the institution where the project will be located. Research projects often require a variety of hardware or software and there should be clear evidence that adequate facilities are available to support the project.

**Budget**

The project budget should include clear and reasonable estimates of the costs of each element of the project, and there should be enough supporting information to indicate how the estimates were developed. Base salaries for all staff, standard charges for computer use, and allowable travel costs are a few examples of useful background information. In preparing the budget, remember that the budget is a reflection of the offerer's understanding of the project and his/her ability to plan and manage effectively. A budget that is too low may indicate failure to grasp how much work is really necessary to do a good job. A budget that is too high may also suggest a lack of understanding of what is required, or it may reflect careless management. Both make the proposal unattractive. The grant programs and RFP's require that certain forms be used in preparing budgets, although background information can usually be presented in a number of ways. These forms should be filled out carefully and completely, since they are usually examined first when business sections of the proposal are reviewed. Even if a budget is not required, it is a good idea to have a budget for internal purposes.

**A final note about good proposals**

Quality writing is critical in all good proposals. It should be clear, concise, and free of jargon. There should be no spelling or grammatical errors, and the proposal should be easy to read. Sloppy proposals and proposals laden with jargon do not provide a positive image of the offerer, nor do they lend confidence that solid research will follow. Proposals that are well-written and attractive are a pleasure to read, and they make a good impression with reviewers.