RESEARCH PROPOSAL PREPARATION INSTRUCTIONS

The following is adapted from grant proposal requirements of NIH and NSF.

A. Topic for the Proposal

Your proposal must be for original research that has not previously been attempted by any person. The research may not be directly related to your own research, but may
    (i) utilize methods you are currently using so long as they are applied to a completely different system, or
    (ii) utilize your system provided that you use completely different methods to investigate it, or
    (iii) be completely unrelated to your research system or methods.

You are expected to propose a set of experiments that will either
    (i) lead to new information of importance in characterizing the system you have chosen, or
    (ii) lead to development of new procedures that have potential for application to other systems.

If you are planning to study a system, your proposal should be ***hypothesis driven.*** You should state your hypothesis, what is known, what is unknown, and how your proposal will fill the gap. If you are developing a new method, you should survey existing methods, discuss their advantages and disadvantages, and explain how your method will lead to improvements.

You should assume that you will be the only person working on this project, but you may purchase standard analyses if they are not the main point of your proposal (e.g., Mass Spec, elemental analyses, etc.). You should plan a project that will take not more than three years to complete.

Before you write your proposal you should discuss the topic and your general idea with your research advisor and obtain his/her approval to proceed.

B. Format of the Proposal

a. Use a Times New Roman typeface at a font size of 12 points or larger. A font size of less than 12 points may be used for mathematical formulas or equations, figure, table or diagram captions and when using a Symbol font to insert Greek letters or special characters, but be sure they are easily readable.
b. Page margins, in all directions, must be one inch.
c. All pages must be numbered.
d. Use only a standard, single-column format for the text.
e. Lines must be single-spaced.

C. Proposal Contents
This is the main part of the proposal.

a. Title Page
(a) Title of Proposed Project.
   The title of the project must be brief, scientifically or technically valid, intelligible to a scientifically or technically literate reader, and suitable for use in the public press.
(b) Your name.
(c) Total Direct, Indirect, and Total costs.
(d) The proposed duration for which support is requested. This must be consistent with the nature and complexity of the proposed activity **and should not exceed three years.**

b. Project Summary and Specific Aims (One page)

The proposal must contain a summary of the proposed activity suitable for publication, not more than one page in length. It should not be an abstract of the proposal, but rather a self-contained description of the activity that would result if the proposal were funded. The summary should be written in the third person and include a statement of specific objectives and the methods to be employed. It should be informative to other persons working in the same or related fields and, insofar as possible, understandable to a scientifically or technically literate lay reader. The specific aims of the research should be very clearly stated.

c. Project Description (not more than 15 pages, excluding references)

(i) Content

The Project Description should be divided into two sections, and include references to published literature:

(1) Background and Significance

 Your proposal should include an introduction to the research where you provide enough information to explain the system(s) and technique(s) you propose to investigate or utilize. You should include enough introductory information so that a reviewer not familiar with the system or the techniques used can understand the proposal. You should also explain the significance of the problem; why is this worth studying? This should not be more than **SEVEN** pages long.

(2) Research Design

The Project Description should provide a clear statement of the work to be undertaken and must include specific objectives for the period of the proposed work. You should first outline the general plan of work, including the broad design of activities to be undertaken, and then discuss the detailed experiments to be undertaken and their sequence. Where appropriate, provide a clear description of experimental methods and procedures to be used. You should provide

alternative strategies for experiments where you might encounter difficulties. While your committee may examine you on any experiments you mention, you should only provide written details for non-routine experiments. For all proposals, but especially for computational proposals, you should carefully explain how you will analyze your data if this is not routine. You should end with a short summary making clear the significance and expected impact of the results if your proposed research is successful. This part should be at least **EIGHT** pages long.

(ii) Page Limitations and Inclusion of Universal Resource Locators (URLs) within the Project Description

The Project Description **may not exceed 15 singly-spaced pages.** Visual materials, including charts, graphs, maps, photographs and other pictorial presentations are included in the 15-page limitation. The project description must be self-contained and URLs that provide information related to the proposal should not be used.

D.   References Cited

 Reference information is required. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the website address also should be identified. Proposers must be especially careful to follow accepted scholarly practices in providing citations for source materials relied upon when preparing any section of the proposal. While there is no established page limitation for the references, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 15-page project description.
It is strongly recommended that you use EndNote for your references, formatted for either the Journal of the American Chemistry Society or the Journal of Biological Chemistry. The proposal will not be accepted if there are errors in the references.

E.   Timetable and Budget

 You should provide a timetable estimating how long the major stages of the work are expected to take. This should be a single paragraph.

You must provide a budget that includes those of the items listed below that pertain to your project. You do not need to justify items in writing, but in the oral examination you may be asked to. The total grant should not exceed $500,000 for three years, but you may need much less than this. Note that the value of the results obtained for the amount of money spent is a factor in evaluating the grant

   (i) Salaries
   (a) Include salary for yourself and any other postdocs. Allow $40,000 p.a. per person (including yourself as a full-time postdoc).
    (b) Salaries for any graduate students should be itemized at $20,000 p.a. per person.
    (c) Allow $000 for undergraduate summer salaries (they are not paid during the academic
        year)

(d) Add fringe benefits of 11.1% (Clark current postdoc rate) to all postdoc and student salaries.

(ii) Equipment
Equipment is defined as an item of property that has an acquisition cost of $5,000 or more. Items of needed equipment must be adequately justified, listed individually by description and estimated cost. Allowable items ordinarily will be limited to research equipment and apparatus not already available at Clark University for the conduct of the work. General-purpose equipment, such as a personal computer and office furnishings, are not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.

(iii) Travel
Funds should be requested only for field work or visits to other places to carry out the research.

(iv) Materials and Supplies
The proposal budget justification should indicate the general types of expendable materials and supplies required. Materials and supplies are defined as tangible personal property, other than equipment, costing less than $5,000, or other lower threshold consistent with the policy established by the proposing organization. You do not need to detail individual costs of items costing under $500 each but cost estimates must be included for items that represent a substantial amount of the proposed line item cost. Items may be lumped together under general listings (e.g., glassware, refrigerants, chemicals, charges for use of instruments, etc.)

Anticipated services provided by other places (e.g., microanalyses, sequencing, MS costs, etc.) must be justified and budgeted at current rates.

(v) Total Direct Costs
Add all the above costs.

(vi) Indirect Costs
Multiply the total direct costs by the institutional indirect costs rate. At Clark, these are currently 52.0%.

(vii) Total Direct and Indirect Costs
Add direct and indirect costs.