

TO: Chemical Biology Students
FROM: Prof. Scott K. Silverman
DATE: July 23, 2007
SUBJECT: Original Research Proposal
COPY TO: Research Advisors

The original research proposal (ORP) is the last formal requirement for your Ph.D. before your thesis defense. Its review must be completed by the last day of the second semester of your fourth year. If you wish to submit your proposal early, you may do so any time after completion of your oral preliminary examination. The deadline for final submission of your proposal is Monday, March 31, 2008. Any revisions must be completed by Friday, May 9, 2008.

DEADLINES:

- Submission of pre-proposal: Monday, March 10, 2008
- Submission of second pre-proposal if required: Monday, March 17, 2008
- Submission of final written proposal: Monday, March 31, 2008

I. PREPARATION OF THE ORIGINAL RESEARCH PROPOSAL

- A. **TOPIC:** The topic for your original proposition should be within the broadly defined purview of chemical biology, but not directly related to your thesis research project or research projects currently underway in your group. Any questions on whether the proposal is sufficiently distinct from your thesis project can be resolved by consultation with your thesis advisor and/or the faculty member who is serving as Program Proposal Officer (P.P.O.). A general guideline is that your proposal should be quite distinct from your thesis research in either the scientific problem addressed or the methodology used, and ideally (but not necessarily) in both facets.
- B. **PRE-PROPOSAL APPROVAL:** To assure that your idea for a proposal is of appropriate scope and originality, you should submit a one page pre-proposal to the P.P.O. by Monday, March 10, 2008. If not approved by the P.P.O., a second pre-proposal must be submitted and approved by Monday, March 17, 2008.
- C. **SCOPE:** Your proposal will be judged for its significance, approach, and innovation. A successful proposal does not necessarily need to be rated extremely high in all three of these review criteria. The scope of the proposal should be similar to that of a junior faculty starter grant. There are numerous funding agencies that provide start-up funds for young faculty; examples are NSF, NIH, Beckman Foundation, and ACS-PRF. Please review the proposal criteria from these agencies (all available

online) to aid in the preparation of your proposal. You can assume that all essential equipment has been provided in the start-up package from your new institution. You should not propose a simple systematic extension of established facts, such as preparation of an analog or measurement of an unreported physical property. The work you propose should be of sufficient scope that a skilled graduate student might complete the studies as a Ph.D. project.

D. **FORMAT:** Your proposal document should be in 12-point type and have 1.5 line spacing with 3/4 inch margins. Include page numbers. The body of your proposal (i.e., Sections 2–4 as listed below) may not exceed ten pages, excluding abstract, figures, and literature references. A summary of the expected sections is as follows:

- 1) **Abstract:** A summary of the rationale of the research, its scientific objectives, and an estimate of the significance to the field of research if the objective is reached. Required length: <250 words on a separate page (you can include the abstract directly on the title page).
- 2) **Specific Aims:** State the long-term objectives of the proposal. Then, for each of 2–4 specific aims, describe concisely and realistically what the research is intended to accomplish. The specific aims section is NOT an introduction section. Recommended length: <1 page.
- 3) **Background and Significance:** Provide background (introduction) to the proposal; critically evaluate existing knowledge; and specifically identify any gaps that the project will fill. Describe the significance of the research by relating the specific aims to the long-term objectives. Recommended length: 2–3 pages.
- 4) **Research Design and Methods:** Describe the research design and procedures that will accomplish the specific aims. Each specific aim should have a separate subsection. Describe any new methods and their advantages over existing methods. Outline preliminary experiments that will determine feasibility of the research. Discuss potential difficulties and alternative approaches to achieve the specific aims if the initial approaches fail. Include a description of required equipment and computational resources and a two-year projection of activities. Recommended length: 6–7 pages.
- 5) **Literature references:** Use the format for a high-quality chemistry journal (*J. Am. Chem. Soc.* is always acceptable). Begin the list of references on a new page.

E. **SUBMISSION:** A copy of your proposal in PDF format must be submitted electronically to the Chemical Biology office (chembio@scs.uiuc.edu) by 5:00 p.m. on Monday, March 31, 2008. Proposals will not be accepted after this date and time.

II. REVIEW OF THE ORIGINAL RESEARCH PROPOSAL

Your proposal will be reviewed by at least three members of the faculty, as designated by the P.P.O. The reviewers will evaluate the proposal according to the following three criteria:

- 1) **Significance:** Is the problem important and will scientific knowledge be advanced?
- 2) **Approach:** Are the design, methods, and analyses adequately developed, well-integrated, and appropriate?
- 3) **Innovation:** Does the project employ novel concepts, approaches, or methods?

The reviewers' comments in each of these areas, along with an overall recommendation, will be forwarded to the P.P.O. The P.P.O., with the concurrence of the reviewers, will compile and return the reviews to you with one of three decisions: 1) Fund (i.e. pass); 2) Revise in accordance with reviewers' comments and resubmit; 3) Redo entire proposal within a set time period. A successful proposal ("Fund") does not necessarily need to be rated extremely high in all three of the review criteria. Many strong proposals nevertheless receive a "Revise" if the faculty feel it is in your best interest to revise the proposal.