RESEARCH PROPOSAL GUIDELINES

Following the completion of cumulative exams, the student must present and defend an original research proposal in front of a faculty committee selected by the graduate committee, which excludes the student's research advisor. A written paper shall be handed out to the committee one week before the oral presentation. The format of the written proposal should be similar to the project description of an NIH postdoctoral fellowship application. The proposal can be in any area of chemistry, but should be on a topic which is not closely related to research ongoing at Emory or conducted at any institution which you attended prior to coming to Emory. The oral presentation should be limited to about one dozen transparencies which clearly define the proposed problem and how one would accomplish the proposed research. This requirement should be completed by the end of the fourth year (see divisional requirements for exact deadlines).

The following is closely based on the instructions to applicants for NIH postdoctoral fellowships, and is intended as a helpful set of guidelines for preparing an excellent proposal, at least with regard to the format.

**Item 30b. Research Training Proposal.** This section should be well formulated and presented in sufficient detail that it can be evaluated for both its research training potential and scientific merit. It is to be written by the applicant.

Include sufficient information to permit an effective review without reviewers having to refer to the literature or any previous application. Brevity and clarity in the presentation are considered indicative of an applicant's approach and ability to conduct a superior project. Sections (1) through (3) of this item are **not to exceed 10 pages including all tables and figures.** Follow the format below:

1. **Specific Aims.** State the specific purposes of the research proposal and the hypotheses to be tested. (1/2 - 1 page suggested)

2. **Background and Significance.** Sketch briefly the background to the proposal. State concisely the importance of the research described in this application by relating the specific aims to broad, long-term objectives. (1 - 2 pages suggested)

3. **Research Design and Methods** (remainder of proposal) Provide an outline of:
   * Research design and the procedures to be used to accomplish the specific aims;
   * Tentative sequence for the investigation;
   * Procedures by which the data will be analyzed; and
   * Any procedures, situations, or materials that may be hazardous to personnel and the precautions to be exercised.
Organic Division Preproposal Guidelines

Purpose of the Preproposal:

The preproposal allows each student to discuss the basic idea of their proposal with their committee members, and should allow the committee members to help the student to identify any fundamental flaws in a proposal with regard to topic selection or approach to the proposal that could lead to the student having to redo a proposal, before the student has invested very large amounts of time in preparing a full proposal.

Students are reminded that their proposal should differ significantly from their graduate work (or the research conducted in their group). We will be looking to enforce this longstanding rule, to maximize the learning opportunity associated with the proposal.

Content of the Preproposal:

Many proposals deal with the synthesis of complex molecules. If this is the case, there are certain items that should be included in the preproposal:

1. **Brief** introduction explaining why the molecule is scientifically interesting.
2. **Brief** description of prior synthetic work in the literature. Outline key strategies that have been used for the molecule itself, or for closely related molecules.
3. **Retrosynthetic analysis.** Outline the strategy you will use. Provide precedent for the key step or steps required to assemble the molecule. It is helpful if you provide ChemDraw structures of the actual reaction(s) you are using as precedent – details are important! If you draw the reactions used for precedent in the preproposal, then your committee will not have to track them down, and you may hear back from your committee more quickly...
4. If it turns out there is not as much precedent as you had thought, but you have identified an interesting, and viable approach to an important functional array, then you should consider developing the idea into a methodology proposal – or have a subsection of the proposal devoted to exploring the methodology.

We do not need (or want) a full synthetic scheme in the preproposal. If the strategy looks good, the details can be filled out for the proposal itself.

For a methodology-based proposal, the preproposal should contain:

1. A brief introduction – outline the transformation being proposed – explain why it is important. (This may include a description of current methods that might be used given that your methodology doesn’t yet exist).
2. Describe key precedent that your methodology will build on.
3. If there is similar methodology in the literature, outline how your new method is different.
RESEARCH PROPOSAL

Student Name:

Date of Proposal:

Title of Research Proposal:

Committee Members and Evaluation (please circle S=Satisfactory, or U=Unsatisfactory)

1. ________________ S U ________________ (name) ____________________________ (signature)

2. ________________ S U ________________ (name) ____________________________ (signature)

3. ________________ S U ________________ (name) ____________________________ (signature)

Advisor/Committee Comments:

Please attach a copy of the research proposal and any required addenda.
Return to Ann Dasher, Room A310.