

## 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 long-standing 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.

When thinking about a new method, an intimate knowledge of the key precedent(s), and an appreciation of potential competing pathways will be important in establishing a convincing argument that your methodology will work.

### **General comment**

The preproposal has been introduced to help you write a successful proposal. However, having a preproposal approved does not guarantee that the proposal will “pass” first time – there should be significant development of ideas and consideration of detail between the preproposal and the proposal stage, and this will ultimately determine the outcome of the proposal exam.