**Proposal Writing and Organization (For QE2, Department of Chemistry)**

***Preparation***

Prepare your materials in advance.

* Know your audience. Who will review your grant? They may not be experts in your field, so ensure that you make your content accessible and not oversimplify.
* Start freewriting without considering the word count. Focus instead on getting your ideas on paper to start the writing process. (If you struggle with getting started, consider opening your computer’s transcription tool and talk about your project to get text on the page.) At this point, do not worry about grammar, punctuation, capitalization, citations, etc. Document *your* ideas.
* Build your annotated bibliography with correctly formatted citations and strong summaries that you can move into your narrative and adapt to create cohesion. (A strong annotated bibliography will help you in the drafting and revising phases of writing.)

Consider organization and think about your introduction to ensure that you

* Demonstrate your knowledge of the existing research and literature.
* Identify the space you will fill with your research.
* Explain how you will fill that void.
* Give the reader details about your proposed solution, establishing your work within the scientific discourse.

(Swales’ CARS method will help you write a strong Background and Significance; use a resources like [this USC Library Guide](https://libguides.usc.edu/writingguide/CARS) to work through your material and write a stronger background.)

***Organization of a Research Proposal***

Organize your content in logical structure.

1. Background and Significance (Build this section with a rigorous literature review that builds on the start of your QE1. Focus your narrative on research methods and findings, using in-text citations to document the authorship. Synthesize your findings, weaving a unique picture of the existing published research and establishing a research space that defines where your research will fit. [Note that the department rubric emphasizes “synthesis”!] Synthesize by writing about research, rather than leading sentences off with authors’ names—the authors are not what aligns with the research space you will be addressing.)
   1. General statement defining area of research
   2. Strong literature review of existing research, focusing on the “space” that the student will propose to fill with his/her research
   3. Clear statement of that void/need
   4. Segue into proposed research

Some sources will limit these to a paragraph; use the number of paragraphs that you need, considering topic sentences and the organization of your thoughts and research. (You might need a paragraph for each subset of your research.)

1. Proposed Research (Deliver your Specific Aims with concise language, focusing on what you seek to accomplish. List ONE aim at a time; ensure that each aim is a singular goal. Use resources and examples to see how to strengthen the language of your specific aims: (1) Look at publications from your lab advisor, (2) consider public materials [[NIAID of NIH provides a strong checklist to evaluate Specific Aims](https://www.niaid.nih.gov/grants-contracts/draft-specific-aims). [URMC Rochester has a solid handout for writing aims](https://www.urmc.rochester.edu/MediaLibraries/URMCMedia/medicine/documents/Tips-for-Writing-Specific-Aims-CEQ.pdf). [BioScience Writers has published a strong document on Specific Aims](https://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx). [Monte & Libby have a publication addressing Specific Aims](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6133727)\*\*.], and (3) draft you aims and then let peers and time help you improve the wording.) Use focused language, starting with active verbs in parallel construction. Use language that non-experts can understand; define and explain terms and methods.
2. Summative Conclusion (This paragraph relays the value, or impact, of your study. You should infer the impact in the introduction but strengthen your statement here. Write persuasively, seeking to influence the reader to *want* you to complete your research.)

*\*\*An outstanding resource!*

In constructing Specific Aims, ensure that you are concise, realistic in scope, and focused on aims that do not depend on each other—that is, you do not want Aim 2 to automatically fail if you do not succeed in Aim 1.

***Writing Skill and Content***

Proofread well. Use Microsoft Word’s spelling and grammar editing to identify basic grammar issues. Use TurnItIn for the Similarity Index and grammar checks. (You may need to ask your administrator to create a TurnItIn assignment for you to use as you prepare. Ensure that the Similarity Index report is one that can be accessed before the end of the assignment created, and do not upload your document into a student repository; search other repositories, but retain the privacy of your submission.)

Ask your professor, lab advisor, lab peers, and other trusted individuals to proofread. Do not freely release, and do not use GoogleDocs, as all content on that tool can be accessed and used by Google corporate. (Protect your intellectual property!)

Consider the following writing principles (that are covered in CHEM 6383):

* Cohesion—Sparingly use transitions, consistently use the old/new pattern.
* Coherence—Use strong topic sentences and ensure that the paragraph maintains a focus on THAT topic.
* Concision—Use active voice, actions as subjects of sentences, and strong action verbs that relay decisive action—measure, define, isolate, etc. Stay away from “to be,” “to do,” “to have,” and “to make.”
* Clarity—Eliminate redundant and ambiguous language.
* Credibility—Cite sources for uncommon knowledge (to non-experts) and cite multiple unrelated sources (not citations of citations) to demonstrate knowledge of literature across the field. Consider [the CRAAP Test](https://guides.library.utoronto.ca/praxis/credibility) to evaluate the credibility of sources.

In formatting, use 1” margins, 11–12 pt font (preferably a serif font), with white space between paragraphs (with no page limitation). Add visuals with references in text (“See Figure 1.”), labels, strong titles of key words, and citations if the data comes from a published source (yours OR someone else’s; you do not want to plagiarize OR self-plagiarize).