

Research Proposal Instructions

Rationale

This assignment will deepen your experimental knowledge about your project, while setting you up for a productive summer. In general, the assignment is asking you to articulate, *'What experiments do I have to do and how do I design them.'*

Length and Content

The length should be ~4-6 pages, single-spaced, and follow the style of Research Design and Methods section of NIH or NSF proposals. This can be an expansion of your COS-SURF 1 page research description for the summer to also include your research plan for the senior year. Write in a style that someone in your immediate field could understand with more experimental detail. For example, the controls that you would include, why those controls, or why this approach.. Your focus when writing should be to critically think about your experiments.

You should start with one paragraph that states your overarching research question and justifies your research contribution given your field. This will require to you state the knowledge gap in your area of study and why your project will make an impact. Then move on to the Research Design and Methods section.

Required sections for each research question

- Specific aim (or objective)
- Hypothesis
- Rationale
- Experimental strategy (or design) with methods
- Interpretation and significance

Other components can be substituted with NSF style as long as the same information is covered.

Sections not needed for this assignment include the Background and Significance, Prior results/preliminary studies, time table, and budget

Planning ahead

Keep in mind that your Introduction, underpinned by the primary literature, will be due the first two weeks of the fall semester. Therefore, we expect you to work on this over the summer. The Introduction should be at least 4 pages long single-spaced (8 pages double spaced), not including figures.