

HON 3101: Optional NIH-style Science Research Proposal Template

The Honors Program requires that all students in HON 3101 submit a preliminary research proposal agreement document signed by their thesis mentor. The template agreement document may be found here: <https://www.baylor.edu/honorsprogram/index.php?id=961050>, under “Links to Important Documents: Thesis Proposal.”

In addition to this more general document, mentors of research theses in the sciences may require the student to prepare an NIH-style research proposal to better help guide the student’s work in the HON 3101 semester. The following is intended to provide some guidelines toward that kind of more in-depth document.

Elements of an NIH-style Research Proposal

An NIH-style research proposal should be at least 1-2 pages in length, single-spaced in 11-point Arial font with 1-inch margins. However, the format and length of the proposal can be altered at the research mentor’s request to better suit individual research goals. The Honors Program suggests an NIH-style specific aims page as a template for composition and content.

Writing in this style gives students practice in communicating about their research in a way that engenders support for the work and confidence in their ability to conduct the work.¹ We suggest the following article as a starting point, although the mentor is entirely free to suggest alternatives:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6133727/pdf/nihms956385.pdf>
https://accelerate.ucsf.edu/files/TICR_GrantWritingPt3Examples.pdf

In general, the NIH-style research proposal will include the following components. Quotations are drawn from the article listed above:

- Background and rationale for the proposed thesis project

“The first paragraph introduces the problem to be solved, educates the reviewer on what is known, identifies the knowledge gap that the planned study will fill, and relates the project to the funding agency mission.”

“Paragraph 2 describes the rationale for the proposed study. It is here that the researcher reveals the proposed solution to bridge the (previously identified) knowledge gap: a high-level proposal to fill the knowledge gap, why it is the right solution, and why this team is the right one to do it.”

“The rationale paragraph is an ideal location for an overall study objective.” (Some mentors may prefer a statement of hypothesis.)

¹ The Honors Program recognizes that other proposal formats can serve the same purpose, with NSF, USDA, DoD or other funding agency proposal templates as excellent alternatives. Links to guidelines for these proposal formats are found at the bottom of the next page.

- Specific objectives of the proposed thesis project

“Ideally, the aims will directly address the identified [knowledge] gaps.”

“Specific aims are treated as a paragraph although they are generally a list with some type of outline numbering. Taken as a whole, specific aims outline the key steps to fulfill objectives that address a critical need. Aims are clear, achievable, and directly related to the content provided in the preceding paragraphs.”

- Research methods, procedure, and plan of work--these elements are often interwoven within the list of specific aims or rationale for the proposed project

- Overall impact, significance, and/or innovation paragraph

“Describe... specific ways the proposed project will be of value to the funding agency, to the field of inquiry, and to society.” For some proposals, a statement of significance or innovation may be more applicable. Use Nature or Science format for references which includes article/book titles.

- Bibliographic References: although the number of citations are traditionally kept to a minimum in NIH-style specific aims pages, for the purpose of a thesis proposal we suggest sufficient bibliographic references to demonstrate familiarity with scholarship in the field and to document the integration of prior research into the narrative portion of the proposal. The references are not counted in the 1-2 page limit for the proposal.

Other Options for the Research Proposal:

While the NIH-style thesis proposal is quite helpful for science-based research project, thesis mentors and students may explore other possible proposal guidelines. A few such documents are linked below.

Resources for project proposals in other fields:

- <https://www.baylor.edu/research/resources/index.php?id=963852>

NSF

- https://www.nsf.gov/pubs/policydocs/pappg18_1/pappg_2.jsp
- <https://grantwriting.stanford.edu/project-summary/>

USDA

- <https://nifa.usda.gov/sites/default/files/resource/NIFA-18-013-Sample-NIFA-Grants-Application-Guide.pdf>
- https://www.sbtcdc.org/pdf/sbir_sample_proposals.pdf

DoD

- https://cdmrp.army.mil/funding/pa/08ocrptrp_instruct.pdf