

Proposals for the Oral Thesis Proposal Examination

The purpose of the following outline is to provide some guidance for students as to the form and function of the written proposal portion of the Oral exam. The written portion is modeled after the NIH F31 Predoctoral Fellowship guidelines.

The goal of the written document, like an F31 grant, should be to persuade a reviewing group that your goals are interesting and important, that you have chosen a plan of experimentation that is highly likely to return interesting and interpretable results in a reasonable time frame, and that you have the background and understanding to bring this plan to fruition. In any such proposal, clarity is key. The people who review the proposal will not all be experts in your field and you must therefore provide significant information to document the above goals to this group. In line with this idea, you should avoid unnecessary arguments and information, since they will distract from the essential arguments. Begin your preparations of the overall outline of the proposal well before the fact and discuss the goals and approaches with others before writing the proposal. You are strongly encouraged to obtain input from other students and colleagues, and particularly from your advisor, prior to distribution of the proposal to your committee. The proposal description below contains information about the overall structure of the proposal as well as suggestions about each of the individual sections. If you have further questions concerning the proposal, contact either your research advisor or the Program Director or Student Coordinator.

Like all research proposals, the written portion of the Oral exam should not be viewed as a contract; the successful dissertator may pursue other related topics/aims for completion of the Ph.D. The purpose of the document is to demonstrate the ability to synthesize in writing a reasonable and coherent research plan and to discuss it intelligently with one's faculty committee. It is often advisable to divide the following sections into subsections with titles to orient the reader.

Overall format:

The total length of the written document is restricted to 7 pages (including figures but not including bibliography), single-line spacing, Arial 11 pt font, with 0.5 inch margins all around. The format should be as follows:

Specific Aims (1 page):

The aims page generally consists of ½ page narrative of the overarching problem, why it is important, and the guiding questions of your research project. This is followed by an outline of the aims, with 1-2 sentences under each aim header listing the specific approaches that will be used to address that aim. The aims provide the framework for the Approach section, so its organization is key to the entire proposal. Try to be realistic and propose an amount of work that you are likely to accomplish in the next 2-3 years; excessively optimistic proposal suggest a lack of critical thought.

Research Strategy (6 pages with the following sections):

Background and Significance (~1.5 – 2 pages): This section should contain enough information to make the subsequent sections understandable to the reader. It should also give the reader an understanding of the state of the field before your participation. It should therefore cite any critical information that is either published, or known to you through personal communication. Your

accomplishments will be described in the following sections, but it may be necessary to allude to some of your results in this section for clarity or argument. Relevant results from others in your laboratory should be described in this section. This section should also serve to convince the reader that the general questions chosen are important. Be sure to adequately cite the existing literature (a key sign to reviewers that you have deep knowledge of the field).

Preliminary Results (if relevant, usually 1-1.5 pages): Describe the progress relevant to the proposal that you personally have made while in the lab. The goal of this section is to convince the reader that you have made some progress and/or that you have developed laboratory and analytical skills that will be necessary to complete the proposed work.

Experimental Approach (2.5-3 pages): Typically organization in this section will follow the order laid out in the Specific Aims. The goal here is to show that the approach you have chosen will yield interpretable results and that you really understand those approaches. You should lay out the approach for each experiment, with enough detail to show the reader that you have thoroughly thought through the experiment. Outline the expected results and how it will advance your understanding. Each aim should have a section addressing potential pitfalls and alternate approaches that could address those pitfalls. Provide enough information to make it clear that you understand each technique; this does not mean an abundance of detail, but a terse description of the approach and potential problems and shortfalls in the experiment or its analysis. If there are obvious experiments that will *not* be done, briefly say why (because reviewers will otherwise think of those). Throughout this section, make your priorities clear; not every experiment is equally important, and some approaches will be pursued only under certain circumstances. Continually orient the reader by explaining how each intermediate goal fits into the overall plan.

Timeline: This is often a short table that should be a realistic estimate of when the critical intermediate goals in the proposal will be accomplished. It should also make clear when the primary approaches will be dropped and the alternatives adopted. You wish to show that, no matter what happens, you will return with an investigation suitable for a thesis in a reasonable time period, even if some of the experiments do not go as planned.

Literature Cited (additional pages):

Using a standard format (authors' names and journal citation including titles), list the references cited throughout the proposal. This should not only document your understanding of the current state of information, but also that you know the critical sources of information on the methods you have proposed to use.