

Guidelines for the Research Proposal for Advancement to Doctoral Candidacy in the Endocrinology and Animal Biosciences Graduate Program

Academic Standards Committee (Nick Bello, Tracy Anthony, and Troy Roepke)

Introduction

Doctoral students have three requirements to advance to candidacy: (1) passage of a written comprehensive exam; (2) ***submission and committee approval of an NIH-style research proposal that will form the basis of their dissertation work***; and (3) oral defense of the research proposal. The purpose of this document is to provide students with guidelines to follow in formatting the written research proposal.

Proposal Guidelines (modified from NIH F31 predoctoral fellowship requirements)

The research proposal should be developed with the student's advisor, but written entirely by the doctoral student. Each student should comply with the format/type requirements and page limits below.

Once the proposal has been approved by the PhD advisor, the student should submit the proposal electronically as a Word file for review to all the graduate committee members and the Graduate Program Director. This submission should be at least **two weeks prior to the proposal defense**.

- Text should be single-spaced and single-sided.
- Each page must have 1/2" margins on all page borders.
- Arial or Helvetica Font style, 11-point font size.
 - Type density: Must be no more than 15 characters per linear inch (including characters and spaces).
 - Line spacing: Must be no more than six lines per vertical inch.
 - Text color: No restriction. Though not required, black or other high-contrast text colors are recommended.
- Spell out acronyms the first time they are used and note the appropriate abbreviation in parentheses. The abbreviation only may be used thereafter.
- Figures, tables, and figure legends may be smaller text, but should be clearly legible.
- Length of proposal is 8 pages total with 1 title page, 1 page of Specific Aims, and 6 pages of Research Strategy. Figures, tables, and figure legends must be included within the 6-page Research Strategy limit. References are not included in the page limitations.
- Referenced citations can conform to any desired peer-reviewed journal guidelines, but must include name of all authors, the article and journal title, volume number, inclusive page numbers, and year of publication.
- Citations should be referenced in the proposal text by author et al. and year (Smith et al., 2018).
- Limit references to primary (original) research articles. Review articles should be cited only sparingly.
- There is no page limitation for the references section, but please cite only relevant publications.
- Use of a reference management program (e.g., End Note, Reference Manager, Mendeley) is required. Contact Aaron Delarosa (delarosa@sebs.rutgers.edu) or Rutgers IT department for questions concerning available software.
- No appendices are allowed.

The research proposal should follow the outline below. There should be a strong emphasis on the *aims*, *significance* and *experimental approach* (i.e., Why are you doing the experiments? and How are you doing the experiments?). The suggested lengths (in parentheses) are guidelines only, but the entire proposal (including items 1-5) should not exceed the 8-page limit.

1. **Title, abstract, and integrity statement** (1 page)

The front page of the research proposal should include the title, student's name, advisor's name, and abstract (250-word limit). A statement of compliance with the Rutgers University Policy on Academic Integrity (see <http://academicintegrity.rutgers.edu/academic-integrity-policy>) should also be included on the front page of the proposal.

2. **Specific Aims** (1 page)

Provide a clear, concise summary of the aims of the work proposed. Clearly state the hypothesis to be tested and how the specific aims relate to the hypothesis.

3. **Background and Significance** (1 to 1.5 pages)

Sketch the background in support of the proposal. Summarize important results reported by others in the same field, critically evaluating existing knowledge. Identify gaps that this project is intended to fill. State concisely the importance and relevance of the research to the related fundamental problems.

4. **Preliminary Studies** (0.5 to 1 pages)

Present previous work related to the proposed research that will help to establish the feasibility and rationale. Preliminary data does not need to be extensive or entirely from the student's own work and can include published data from the student's lab.

5. **Research Design and Methods** (3-4 pages) – For each of the aims:

- a. Clearly describe the hypothesis to be tested as well as the underlying rationale.
- b. Describe the experimental design and methods in sufficient detail to allow adequate evaluation of the approach to the problem. Describe any new methodology and its advantage over existing methodologies. Clearly describe overall design of the study, with careful consideration to statistical aspects of the approach, the adequacy of controls, and number of observations as well as how results will be analyzed.
- c. Present the expected results. Include potential pitfalls and limitations of the proposed research plan and alternative approaches to achieve the aims.
- d. Provide a tentative sequence or timetable for the proposed research.