

## **PBSB Admission to Candidacy Exam (ACE) requirements and procedures**

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**Prerequisites:** Prior to taking the ACE, the student must have passed all coursework designated by the student's Faculty Advisors and the Program Director.

**Timing:** Preparation for the ACE should begin before or during the third quarter of year 2. The exam must be completed by the end of the fourth quarter of year 2.

**Structure:** The ACE consists of a tutorial study program resulting in a written research proposal and an oral component.

- The written proposal must address a significant research problem identified by the student. The proposal should be relevant to the student's intended thesis research *but may not be the student's thesis project*. The ACE project may not be based on any project initiated by the student's intended mentor.
- The oral component features a presentation by the student describing the salient features of the written proposal. The examining committee will ask the student to defend any aspect of the proposal and will probe the student's knowledge of the relevant scientific areas.

**Committee:** The ACE committee, which must be approved by the PBSB Director, will be comprised of 4 examiners, one of whom will serve as the ACE Committee Chairperson. All members of the committee must be WGSMS faculty. They might include the student's two PBSB faculty advisors and/or the student's thesis advisor (if the student has chosen a thesis laboratory). The student's thesis advisor cannot serve as Chairperson. It is the obligation of the ACE Committee to provide guidance; committee members may not write or be otherwise responsible for any part of the proposal.

**Written exam Outline:** As the first step of the written exam, the student must present a one-page outline of the intended proposal to her/his ACE Committee. The Committee members should meet with the student to discuss any amendments to the outline. Once the committee has approved the outline, the student should commence with writing the written ACE exam.

**Written exam:** Students will have access to template proposals selected from accepted, PBSB ACE documents. The written research proposal should be no more than 15 pages in length (12 pt font, single-spaced, 1" margins), including figures, but not counting references. The proposal must follow the format of an NIH research grant proposal:

- a. Title page

- b. Specific Aims - State the problem to be addressed and the specific aims of the proposed research. The importance of the problem at the molecular, cellular and organismal levels should be discussed. If pertinent, it is important to address the possible clinical relevance. (suggested length: 1 page)
- c. Background and Significance, including a review of the pertinent literature.
- d. Research Plan describing in detail the experimental design and research methods to be used. Technical hurdles to be overcome should be mentioned. Alternative approaches should be given for experiments that may not be feasible.
- e. Discussion of expected or possible results and their interpretation.
- f. References should be comprehensive and cited in full at the end of the entire proposal.

The student should consult with the members of the ACE Committee while preparing drafts of the proposal. The student's final draft of the proposal must be submitted to all four committee members. The committee is obligated to read and evaluate the proposal within 2 weeks. Committee members can approve the proposal as written or request revisions and resubmission. All four committee members must approve the written proposal and sign the "ACE written-exam approval form", which is to be submitted to the Program Director before the oral component can be scheduled. Each member of the committee is encouraged to provide the student with a short written critique of the proposal.

**Oral exam:** The oral component can be scheduled as early as 2 weeks after the written proposal is approved. The oral component must be scheduled officially with the Graduate School office.

After all members are convened, the student will be excused. During this time, the committee will discuss the student's academic process, the written ACE exam, and any other pertinent issues.

The oral component will then continue with a presentation by the student describing the salient features of the written proposal. The prepared presentation should be 20 to 30 minutes, but it may last longer if the committee chooses to ask extensive questions during the presentation. During and/or after the presentation, the committee will question the student. The committee's questions will likely focus primarily on the significance of the problem addressed, the basic biological principles governing the problem, and the logic of the experimental approach used. Furthermore, the committee will probe the student's knowledge of the relevant scientific areas (thus, any question is "fair game"), thereby ensuring that the student is an appropriate doctoral candidate in PBSB.

When the discussion has concluded, the student will again be excused from the room. The committee will discuss and vote on the exam according to the rules of the Graduate School. The committee will make a written evaluation of the student, which will be forwarded to the Graduate School by the committee chairperson. The committee will convey the assessment to the student before the committee disperses.

**Tabled exam:** If, according to the voting rules of the Graduate School, the ACE committee tables the student's ACE exam (i.e., for the written and/or oral components), the student must attempt to correct deficiencies as specified by the committee (remedies may include retaking the ACE exam) within 2 months. Final disposition of the ACE exam must be no later than 3 months from the date of the original ACE exam.

**Failed exam:** If, according to the voting rules of the Graduate School, the ACE committee determines that a student has failed her/his ACE exam (i.e., failure to pass both the written and oral components) an academic review by the Academic Oversight Committee will occur. The Academic Oversight Committee will consider the student's global academic performance and can recommend that the student be allowed to reattempt the ACE exam or that the student be asked to leave the Program. If the student is allowed to reattempt the ACE exam, the Academic Oversight Committee will set an appropriate timetable.

**Pass for Master of Science Only:** The PBSB ACE rules for "Pass for Master of Science Only" are as defined by the Graduate School.