

GRADUATE PROGRAM IN BIOCHEMISTRY AND STRUCTURAL BIOLOGY

COMBINED QUALIFYING EXAM AND THESIS PROPOSAL EXAM

Students should download this form from

<https://www.stonybrook.edu/bsb/student-research/forms.html>, fill out page 2 and then send to their committee prior to the thesis proposal exam.

This will give the Chair an MS Word document that can be edited on their computer and submitted by email. Add as much text to answer the questions as needed i.e. feel free to use more than the space allotted below.

Student Name _____

Date of Exam _____

Thesis Proposal Committee (List names)

1. Chairperson
- 2.
- 3.

The examination has four components. Each will be graded on a scale of 1-10 (scores of 7-10 are passing). The committee will evaluate each component and describe the reasons underlying their final score in detail.

Oral presentation (Score)

What were the strengths and weaknesses of the presentation? Was the topic properly introduced? Were the research questions clearly described? Were the slides clear and organized? Can the student answer questions on their feet?

Provide a written evaluation of the oral presentation.

The project is very ambitious in scope, because of technical issues with membrane proteins and controlled delivery of the gaseous substrates. A strength is there are two independent aspects of the project (mutation directed evolution and mechanism) and only one needs to be successful. Daniel was able to answer all the questions we asked, he was well prepared. The presentation was well organized and clear. The project was clearly described.

Written proposal (Score)

Is the proposal well-written and properly organized? Does the background provide a succinct motivation for the project with references to the supporting literature? Is the approach well thought-out and described? Is the project feasible in a 3-year time frame? Are the figures clear and not simply copied from published literature?

Provide an evaluation of the written proposal.

The proposal was clear and well-written. The organization is logical. The figures were good. Preliminary data was strong. With regard to time frame, see above.

Basic academic preparation (Score)

Specific questions will be asked that focus on the basic knowledge expected of a student receiving a PhD degree in Biochemistry and Structural Biology. This is a core component of the exam. The questions can range from material covered in course work to basic concepts that are essential components of the thesis research.

Describe the questions asked and the student responses.

There were no defects in basic knowledge noted.

Knowledge and preparedness in specific thesis area (Score)

A second core area of the exam involves the student knowledge and preparedness for their specific research area. Does the student know the relevant background literature? Has the student thought carefully about controls? Are the experiments well designed? Can the student design an alternative experiment in case their favored approach fails?

This component of the exam is crucial for overall passing of the qualifying exam. A score of 6 or lower (in conjunction with passing the other components of the exam) indicates that the student requires more time to master the details of their project in order to advance to candidacy. **Provide an evaluation of student's knowledge and preparedness for undertaking their thesis research project in an independent fashion.**

Knowledge in specific thesis area was very strong. Experiments well designed, there were alternative approaches/contingencies that the student discussed.

Overall Outcome: Choose One and Provide an Explanation if Needed.

- a. **Student passes and it is recommended that they be advanced to candidacy once they have completed their course requirements.**
- b. Delay decision. It is recommended that the student re-defend before the start of their third year, at which point they are either qualified to the PhD or are terminated from the program.
- c. Student does not pass and it is recommended that they be put on the Master's track with an MS or MA after completing 30 credits. They can petition to return to the PhD track and re-defend their proposal.
- d. Student does not pass and it is recommended that they be given an MS, MA or MPhil. They do not have the option to return to the PhD track.

The BSB Executive Committee will make the final decision in consultation with the Qualifying Exam Chair and the Thesis Advisor.

Requirements for the PhD Degree in Biochemistry and Structural Biology

Students – Fill this out as completely as possible and then send this form (along with the rest of this document) to your Thesis Proposal Committee members **before** your exam.

Course Number	Course Name	Semester/Year	Grade
MCB 520	Graduate Biochemistry I	Fall 2024	B
MCB 517	Biomembranes	Fall 2024	B
BSB 515	Computational Methods in Biochemistry and Structural Biology	Fall 2024	S
HBH 550	Statistics	Spring 2025(Module4)	S
BSB 512	Structural Biology and Spectroscopy		
MCB 656 ☐ <i>or</i> MCB 503 ☐	Cell Biology Molecular Genetics		
Elective 1 Course #	Course Name # credits		
Elective 2 Course #	Course Name # credits		
Elective 3 Course #	Course Name # credits		
GRD 500	Ethics		
	CITI On-line training		
COM 565	Communicating Your Science		
BSB 532	Journal Club - Spring Year 1		
BSB 532	Journal Club - Spring Year 2		
BSB 509/ BSB 510	Rotation 1		
BSB 509/ BSB 510	Rotation 2		
BSB 509/ BSB 510	Rotation 3		
BIO 600	TA assignment Spring Year 1 List course and instructor course Instructor Name		
BIO 600	TA assignment Spring Year 2 List course and instructor course Instructor Name		
BSB 601	Colloquium in BSB Year 1 Fall		
BSB 602	Colloquium in BSB Year 1 Spring		
BSB 601	Colloquium in BSB Year 2 Fall		
BSB 602	Colloquium in BSB Year 2 Spring		

Research Proposal Examination

The student is required to submit a thesis research proposal and defend it orally to advance to candidacy. The thesis proposal examination can be given any time after January 1 of the second year – but must be completed by the end of August (i.e. before the start of year 3).

The Proposal Committee is comprised of three faculty members - at least two of which should be members of the BSB program. Ideally, the thesis advisor should be available following the exam to discuss the outcome with the committee.

The student is responsible for choosing the faculty members (in consultation with his or her PhD advisor). The committee selects the Chair, who must be a member of the BSB Program.

The research proposal examination may occur before a student has obtained significant preliminary results, but should occur after a thesis project has been identified. Before the exam, download the proposal forms from the program website and fill out the form with the grades of the required courses and rotations, and send to your committee. For all uncompleted requirements, indicate when they will be satisfied.

There are a series of deadlines prior to the exam.

March 1: The one page specific aims of the research proposal (approved by advisor) is to be sent to the Program Director (Michael.Airola@stonybrook.edu).

May 1: A draft of the thesis proposal (approved by advisor) is to be sent to the Program Director (Michael.Airola@stonybrook.edu).

May 15th: The selection of committee, date and location of exam is due in the program office.

These dates are DEADLINES. It is strongly recommended to plan to have your proposal defense at the end of May or in early June. This would require that you finish the proposal, select your committee and hold your defense well before the deadlines. Later in the summer it is difficult to get faculty together. Start planning this at the beginning of Spring Semester in Year 2 (or earlier).

The Chair of the Research Proposal Examination will complete the first page of this form explaining the decision of the Research Proposal Examination Committee and email the entire form to the student, the committee members and Sharon Schmidt in the program office.

Written Research Proposal for Thesis Proposal Exam

The written research proposal is an integral component of your thesis proposal examination. It is written in the form of an NIH F31 Pre-doctoral Fellowship Proposal (see BSB Orientation Handbook). It has one-page of Specific Aims, and 6 pages of the Body of the Research Proposal. References are added to the end of the proposal and are not page limited. Use the NIH guidelines for font, spacing and margins. These are as follows: Arial font size 11 pt and single spaced, minimum margins are 0.5 inches. Figures and Figure legends can be placed AFTER the references and for the purposes of your Thesis Proposal do not count in the 6-page limit.

The final written proposal is due to your committee and program office TWO WEEKS before the exam.

PhD Thesis Committee:

The **PhD Thesis Committee** is generally the same as the thesis proposal committee composed of three of the faculty from the proposal examination plus your PhD advisor. **The chair must be a member of the BSB Graduate Program.** You will meet regularly with this committee one or more times each year. You are required to have at least four members on your PhD Thesis Committee, including your advisor. The Chair of the thesis committee cannot be the Thesis Advisor. **Note: for your Thesis Defense Committee, you will be required to have one member of the Thesis Defense Committee who is not a member of the BSB graduate program.** This may be someone external to the University (e.g. a collaborator). It is often useful to include this faculty member as part of your research thesis committee early on.

Annual Thesis Research Committee Meetings

Your PhD Thesis Committee must meet once a year (for cases in which students are here beyond the 6th year of their studies, the thesis committee must meet twice a year). It is the student's responsibility to organize the time and location of the Thesis Committee meeting to discuss progress. **You are required to submit a written thesis progress report summarizing your progress to the program office (Sharon.Schmidt@stonybrook.edu) and to your committee by June 15th.** In any event the progress report should be submitted at least one week prior to the committee meeting.

A "PhD Thesis Progress Report" must be filled out by the Chair of the Committee with a copy to the student, the committee members, and submitted to the Program Office (Sharon.Schmidt@Stonybrook.edu) immediately after each meeting. The deadline for this report is September 1 in years 3, 4 and 5 for the student to remain in "good standing". If there is a problem you should see the Graduate Program Director before the deadline.

Ideally your committee will attend your Student Seminar in the Spring Semester and meet immediately after with you to discuss your progress. This is the most efficient way to handle your thesis progress reports.