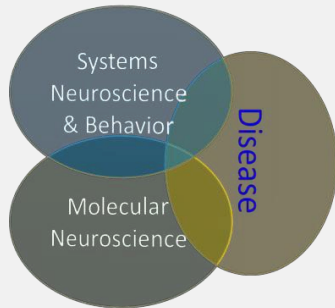


NBS Program Abridged Guide

(Version: August 2017)



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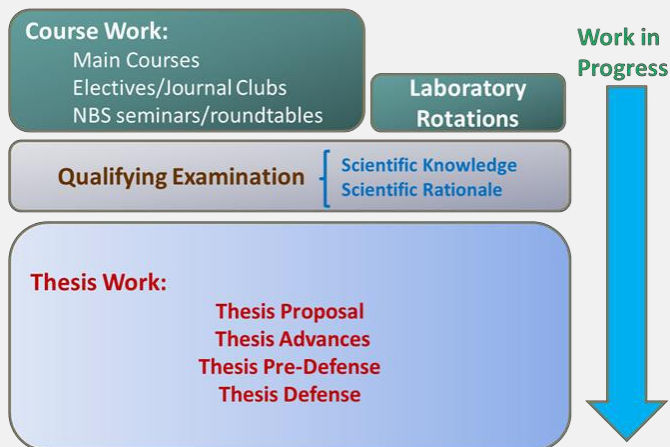
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• Introduction:

The goal of this Guide is to inform faculty and students of the main (but not all) guidelines and policies of the School of Graduate Studies (SGS) and of the NBS program. SGS guidelines and policies are typed in normal font, while *NBS program policies, which only pertain to this program, are displayed in italics.*

SGS guidelines and policies can be found in full in the Student handbook at: http://sls.downstate.edu/student_affairs/handbook.html.

NBS Program at glance



• NBS Courses

Fall Semester

Main:

Biochemistry I (MCB program)

Neuroscience:

- i) *Elements of Neuroscience (D. Ling/S. Fox)*
- ii) *Unit 6 Neuroscience (R. Orman/J. Kubie)*
- iii) *Neural Systems (J. Kubie/JM. Alarcon)*

NBS seminars

NBS roundtables (JM. Alarcon)

Work-in-progress (JM. Alarcon)

Electives:

Calcium Imaging (H. Moreno)

Instrumentation (J. Carter)

Immunology (M. Nowakowski/H. Durkin)

MCB I (R. Kollmar)

Neuroscience – Epigenetics (I. Hernandez)

Neuroscience – Dendritic spines (H. Tiedge)

Neuropsychology (J. Kubie)

Spring Semester

Main:

Cell and Mol. Neuroscience (P. Bergold/ N. Penington)

Ethics (SGS)

Scientific writing (R. Kollmar)

NBS seminars

NBS roundtables (JM. Alarcon)

Work-in-progress (JM. Alarcon)

Electives:

Computational Neuroscience (S. Dura)

Current Topics in Neuropharmacology (R. Wong)

MCB II (MCB program)

Neural Circuits (JM. Alarcon)

Statistics (SGS)

- **Laboratory Rotations**

Two recommended. *Before starting a laboratory rotation, the student and the laboratory's Principal Investigator (PI) should have a clear understanding on the following topics:*

- (1) Start and End Date (important: No open-ended rotations)*
- (2) Schedule (which days of the week, what times, etc.)*
- (3) Purpose: It defines the student's role during the laboratory rotation (e.g. observer-ship, learning a method, running a small project).*
- (4) Expectations: It defines what does the student expect from the laboratory rotation and what is expected from the student.*

Upon discussing these topics with the PI, the student should send a formal notification to the PI (copy to Mr. Ed Throckmorton and Program Director) indicating the student's agreement on these four topics and any other relevant topic. In regards to the length of the laboratory rotation, it should be based on topics #3 and #4, but we discourage rotations longer than two months.

- **Qualifying Examination (QE)**

The purpose of the QE is to gauge the scope and depth of knowledge in the field of Neuroscience before a full commitment is given to independent research. The QE must be passed in order to be admitted to candidacy for the degree of Doctor of Philosophy.

A committee of SGS faculty should be selected by the Program Director/Executive Committee in consultation with the student and student's Advisor(s) (if known). Any member of the graduate programs may be included.

Format

The committee composed of three SGS faculty will formulate up to three questions pertaining to the field of neuroscience. Members can ask one question each, or agree in framing up to three shared questions. It is highly encouraged that at least one question aims at testing the student's capability for scientific reasoning and problem solving.

Written and Oral Exams

A manuscript should be prepared to address all questions. The document, including figures, should not exceed the twelve pages (single-side); with references included separately. The oral exam should consist of a presentation of the answers to the Committee and a question period (not to exceed 20 min per answer).

Timeline (6-8 weeks*)

Week 1: Questions are produced by the Committee

Week 4: Submission of Written Exam

Week 6: Oral Exam

Week 8: Revised Oral Exam presentation (if required)

**Students are strongly discouraged to schedule the QE in August.*

The program decision shall be transmitted to the Dean of the School of Graduate Studies where it will be placed in the student's file. An unsatisfactory performance in the QE may result in cancellation of the student's registration in the program. The decision of whether to cancel registration or to offer an opportunity for reexamination is made by the Executive Committee on the basis of the student's overall academic performance. This decision is not subject to formal appeal.

- **Thesis Committee**

Students are encouraged to assemble their Thesis Committee soon after the initiation of the Thesis work.

The Committee and a Presiding member (who is/are not the research Advisor(s)) are appointed by the Dean, with the advice and consent of the student and the student's Advisor(s). The Committee should ordinarily be constituted, as follows: Five internal Committee members, those being the Advisor(s), and four others but no more than two of those others from the Advisor(s)'s Department. The Director of the Program and the Dean, or designated appointee, are members ex officio, unless appointed to the committee. An external examiner may be appointed, but is not required. Ex officio members are not eligible to vote or to act as presiding member. If a member resigns, the member should be replaced as soon as possible, so as to maintain the above composition.

The presiding member will moderate and participate in all committee deliberations. The presiding member communicates, in the form of a formal letter (which must be approved by the Committee), findings of the Committee to the student and copies that letter to the Dean.

- **Thesis Proposal**

A formal Thesis Proposal should be presented as soon after the Qualifying Examination as possible. *The NBS Executive Committee strongly recommends the Advisor(s) to have students propose within two years of the Qualifying Examination.*

Proposal Format

It is strongly recommended that the proposal should conform to the structure required by the National Institutes of Health for grant proposals:

(1) *Summary*

(2) *Specific Aims*

(3) *Research Design*

Significance (background/rationale/hypothesis)

Innovation

Approach (development of Specific Aims)

Experiment Design and Methods

Preliminary Results (to assess feasibility)

Pitfalls & Alternatives

(4) *References*

The cover page must have the following form:

Thesis Title

A proposal submitted to the faculty of The School of Graduate Studies State University of New York Downstate Medical Center

In partial fulfillment of the requirements for the degree of Doctor of Philosophy by

Name

Program in Neural and Behavioral Science

Date

Thesis Advisor(s)[s]: Name, Degree & Departmental Affiliation

The complete document should be double-spaced with a font of ≥ 10 point and shall not exceed 40 pages (single-side), excluding references. *Students and supervisors are encouraged to use the proposal to generate graduate level grant applications (e.g. F30/31).*

The student must distribute copies of the thesis proposal to all Committee members and the research Advisor(s) **at least two weeks before the formal oral presentation**. Students are strongly discouraged from scheduling the proposal in July, August, or before Labor Day in September.

Formal Oral Presentation

The student will present her or his proposal, orally, without interruption. The presentation shall not exceed 45 min. After the presentation, a Question period will follow; first from the audience and then from the Committee in private.

All internal members of the committee are expected to be present at the proposal meeting; the proposal will be rescheduled if at the appointed time, more than one internal member of the Committee is absent from the proposal meeting.

Committee Deliberation

Discussion of the merits of the proposal and formal deliberation on the action to be taken by the Committee will usually be restricted to members of the Committee in camera. The Committee shall evaluate the student's knowledge of the relevant literature, scientific judgment, ability to reason, ability to use the techniques proposed, understanding of the basis of the techniques to be used and the feasibility and adequacy of the proposed experiments.

The Committee should render, by **majority vote**, one of the following judgments:

- a) Proposal and its defense fully acceptable
- b) Proposal and its defense acceptable with modifications
- c) Proposal and its defense unacceptable

The presiding member should communicate the findings of the Committee in writing to the student and copy the Dean, within one week after the proposal meeting. Suggested modifications or reasons for outright rejection should be noted. All voting members of the Committee must sign off on the communication before it is sent.

If the Thesis proposal or its defense is judged unacceptable, the work must be reformulated and another presentation made. The

Committee shall set a timetable for a new proposal meeting. A student may, with the agreement of the Thesis Advisor(s), request appointment of a new Thesis Committee. However, a proposal, which has been twice rejected, cannot be presented again. A lone dissenting member of the Committee who is unable to accept the final Committee decision must resign. The student and her or his research Advisor(s) must then suggest to the Dean a replacement who is willing to serve on the Committee, has read the thesis proposal and finds it acceptable, as modified.

- **Doctoral Thesis**

Following the Thesis Proposal, students shall present yearly work in progress (WIP) seminars, which may complement formal presentations before the Committee in the form of Thesis Advances, Pre-Defense and Defense. In each of these instances, the student must distribute copies of the Thesis to all Committee members and the research Advisor(s) **at least two weeks before the formal oral presentation.** Students are strongly discouraged from scheduling their presentations in July, August, or before Labor Day in September.

Thesis Advances:

Students are encouraged to present Thesis Advances for the Committee to evaluate progress and direction of research. If major changes in the direction of the research are necessary or unforeseen problems imperil the proposed research design and execution, the Committee should be notified and given an opportunity to evaluate the proposed changes, at the earliest possible time.

Pre-Defense:

At the Pre-Defense meeting, the quality of the written document should be rigorously considered and the adequacy of the work and the student's understanding critically examined. The student could prepare a presentation (no longer than 45 min.) of her or his Thesis work, but the meeting should predominantly involve intensive questioning focused on the research as presented in the written Thesis. Committee members should express substantive criticisms, if any, at this time, and not defer such criticisms until the Thesis Defense. The committee should render, by majority vote, one of the following judgments:

- a) Pre-defense is acceptable
- b) Pre-defense is acceptable with substantial modifications
- c) Pre-defense is unacceptable

Defense:

The Defense presentation should be a public formal lecture, approximately 45 minutes in duration, which is not interrupted by questions. After the presentation, a Question period will follow. Any individual present at the Thesis Defense may ask questions. The Committee Chair should entertain questions from the audience as well as from the Committee before the Committee retires to deliberate in close-session whether the Thesis is:

- a) Acceptable
- b) Acceptable with modifications
- c) Unacceptable

- **Teaching Requirement**

All matriculating graduate students and all MD/PhDs are required to teach in an approved University course for one year. Teaching a total of 50 hours satisfies this requirement MD/PhDs are required to fulfill this requirement uncompensated in the College of Medicine. *Students that wish to build up an education curriculum are highly encouraged to accrue over the teaching hour requirement.*