STUDENT HANDBOOK

GRADUATE PROGRAM IN PHYSIOLOGY

2008-2009

Revised 6/08

GRADUATE STUDY IN PHYSIOLOGY

I. Introduction

This handbook provides basic information about the Graduate Program in Physiology for graduate students, their advisors and major professors. Students are responsible for knowing the rules and requirements of the program as described in this document. Any questions about these requirements or the Graduate Program may be directed to the program director, Gerard Marriott (gm@physiology.wisc.edu), or the graduate admissions coordinator, Sue Krey (krey@physiology.wisc.edu), at any time.

II. 2008-2009 Important Dates

Fall semester	
Labor Day	September 1 (M)
Classes and laboratory rotations begin	September 2 (T)
Rosh Hashanah*	September 30 (T)
Yom Kippur*	October 9 (R)
Thanksgiving recess	November 27-30 (R-N)
Last class day	December 12 (F)
Exams begin	December 14 (N)
Commencement	December 21 (N)
Exams end	December 20 (S)
Spring semester	
Martin Luther King, Jr., Day	January 19 (M)
Classes begin	January 20 (T)
Spring recess	March 14-March 22 (S-N)
Classes Resume	March 23 (M)
Good Friday*	Apr 10 (F)
Passover*	April 9 (R)
Last class day	May 8 (F)
Exams begin	May 10 (N)
Commencement weekend	May 15-17 (F-N)
Exams end	May 16 (S)

* In accordance with Faculty Document 488a, faculty are asked not to schedule mandatory exercises on these dates.

Days: T Tuesday; R Thursday; S Saturday; N Sunday

III. Timeline for progress to the PhD

The following is a typical schedule of progression through the graduate program. Individuals will determine their personal timeline in conjunction with their thesis advisor and committee.

Year 1

Fall
Laboratory rotations
Coursework
- Cell and Molecular Neuroscience (Physiology 610)
- Professional Development (Neuroscience 700)
- Minor Course

Spring
Begin research in thesis lab
Coursework
- Medical Physiology for Graduate Students (Physiology 720)

Summer
Continue thesis research

Year 2

Fall
Continue thesis research
Coursework
- Elective(s)
- Teaching assistant

Spring
Continue thesis research
Coursework
- Elective(s)
- Student seminar series (Physiology 901)

Summer
Continue thesis research
Preliminary Exam Part A

Year 3

Continue thesis research
Preliminary Exam Part B

Beyond Year 3

Continue thesis research
Meet annually with thesis committee
Prepare and defend thesis

IV. Student Advising

First Year Committee

Each student will meet with the First Year Committee upon their arrival to discuss laboratory rotations, course requirements, and other issues pertaining to their graduate studies. The First Year Committee currently consists of Tom Yin, Chair (yin@physiology.wisc.edu), Donata Oertel (oertel@physiology.wisc.edu), Gail Robertson (robertson@physiology.wisc.edu), and Sue Krey, Staff (krey@physiology.wisc.edu).

Thesis Advisor

Each graduate student must select a major professor or thesis advisor by the end of the first semester of the first year. The duties of the thesis advisor are to supervise and support the student's research, provide advice regarding selection of courses, and act as a channel of communication within the Program. The thesis advisor serves as chairperson of the thesis proposal committee (Preliminary Examination Part B) and also of the final oral examination committee.

Thesis Committee

By the beginning of the fall semester of the second year, each student should select a thesis committee in consultation with his or her thesis advisor. The committee must be composed of at least five faculty members, one of whom must have a primary appointment in a department other than Physiology. The candidate meets with the committee bi-annually for the first two years and once a year thereafter to evaluate progress and future research plans. **It is the responsibility of the student to arrange these meetings.** Students should report to Sue Krey when each meeting has taken place.

Grievance Procedures

Students should make every attempt to resolve grievances with their thesis advisor. If this is not possible, the First Year Committee or the Department Chair may be consulted.

Information on the University's appeal and grievance procedures may be found on the University's website at:
http://www.wisc.edu/grad/education/acadpolicy/guidelines.html#97.

V. Laboratory Rotations

Students will complete 3-4 laboratory rotations in faculty labs in order to gain hands-on familiarity with different experimental approaches and to facilitate selection of a thesis advisor. Students should communicate with faculty prior to their arrival in the fall to arrange their rotations so that the first rotation commences within the first few weeks of the semester. It is anticipated that students will have completed their rotations and identified their thesis lab by the end of the first semester of the first year. If a student is unable to meet this deadline, the First Year Committee should be consulted.
Direct Admit students do not participate in laboratory rotations.

VI. Curriculum

The curriculum is designed to provide depth and breadth in physiology, as well as experience in critical reading and presentation of the literature. Courses are selected with the help of the First Year Committee, who may also recommend courses to fill in gaps in a student's background. The Graduate School requires students to take a minimum of 32 course credits in order to qualify for the Ph.D. degree.

Core Courses	
Physiology 610	Cell and Molecular Neuroscience
Physiology 720	Medical Physiology for Graduate Students
Neuroscience 700	Professional Development
Physiology 901	Student Seminars

Electives Available to Physiology Graduate Students	
Biochemistry 550	Topics in Medical Biochemistry, 2 credits
Biochemistry 602	Biochemistry Mechanisms-Regulation/Cell, 2 credits
Biochemistry 630	Cellular Signal Transduction Mechanisms, 3 credits
Biochemistry 665	Biophysical Chemistry, 4 credits
Math 801	Topics in Applied Math, 3 credits
Neuroscience 611	Systems Neuroscience
Neuroscience 625	Brain Cell Culture: Lab Course, 2 credits
Neuroscience 675	Special Topics, 3 credits
Oncology 675	Topics in Cancer Research, 2 credits
Pathology 750	Cellular & Molecular Biology/Pathology, 3 credits
Pharmacology 711	Neurotransmitter Receptor/Ion Channels, 2 credits
Physiology 675-003	Principles of Biophotonics
Physiology 725	Muscle Biology, 2 credits
Physiology 735	Auditory Neuroscience, 3 credits
Psychology 610	Stat. Analysis & Psychology Experiments, 3 credits
Psychology 733	Perceptual & Cognitive Sciences, 2 credits
Statistics 571	Stat. Meth. for Bioscience I, 4 credits
Zoology 570	Cell Biology, 3 credits
Zoology 675	Modern Biological Microscopy, 2 credits

**The Department sponsors weekly seminars during the spring and fall semesters, featuring invited speakers. During the spring semester, presentations in this series are also given by students in partial fulfillment of the 901 course requirement. *Attendance of all departmental seminars is required for all students unless there is a course conflict.* Students are required to take Physiology 901 a second time after completing Part A examinations.

VII. Program Requirements

Core requirement

In general, students must complete the Core Courses before obtaining Dissertator Status. Core courses allowed to fill the core requirement will be selected in consultation with the First Year Committee and the Thesis Committee.

Minor Requirement

In addition to the courses listed above, requirements for a minor must be met. Most students choose a distributed minor (Option B, below). A GPA of 3.0 (on a 4.0 scale excluding research credit) for graduate level courses (generally courses numbered 500 and above) must be maintained. Incomplete grades remaining beyond the next semester are considered unsatisfactory. The Graduate School may put a student on probation if minimum standards are not met. Students may select one of two options for their minor program:

OPTION A (external): Study is done in a single department such as Anatomy, Pharmacology, Biomolecular Chemistry, etc. The specific minor requirements are set by the department chosen. A minimum of 10 graduate-level credits from courses offered by the minor department is required by the Graduate School. Students opting for the type A minor should check with the minor department in question for any special requirements.

OPTION B (distributed): This is a "distributed minor". A minimum of 10 graduate-level credits in one or more departments and can include course work in the major department. Selection of this option requires the approval of the major department. The student and major professor agree upon the courses to be taken. These courses must be selected for their relevance to a particular area of concentration. Some prerequisite courses may be counted towards this minor option. Students should discuss this with their thesis advisor.

The graduate school bulletin contains a listing of all courses offered at the University. This may be used in consultation with the student's major professor to choose minor courses. Copies are available for reference from the faculty, the administrator and graduate student coordinator.

Course Load

Until the minimum credit requirement is met, students register for 8-12 credits per semester for the fall and spring semesters, and 2 credits (non-dissertators only) during

the summer. Graduate credit is earned only for courses scored with letter grades (A, AB, B, etc.) and numbered 500 and higher, unless prior approval is obtained.

Research Credits

Along with formal coursework, students register for research credits.

Teaching Requirement

The Physiology Graduate Program encourages students to develop teaching skills. Students are required to teach, for example Physiology 335 or Organismal Biology, part of the campus Biocore program, for a minimum of one semester. Students may also participate in the Educator Emphasis program.

UW-Madison Minimum Credit Requirement

UW -Madison requires a minimum number of credits to graduate with a Masters or PhD degree. These must be graduate level courses. Although the Graduate School technically allows graduate credit for courses numbered 300 or greater, note that the Program in Physiology requires courses at the 500 level or greater, except in unusual circumstances requiring prior approval (see "Course Load"). A minimum 16 credits are required for a masters degree and 32 credits of graduate level courses are required for a PhD. The minimum credit requirement for PhD students must be completed prior to achieving dissertator status.

VIII. Educator Emphasis

New to our Program is one of the nation's first career tracks leading to a Ph.D. in Physiology with an Educator Emphasis. The Department of Physiology and the top-rated School of Education at the University of Wisconsin-Madison have joined forces to incorporate training and experience in teaching into our traditionally research-oriented Ph.D. program.

The Educator Emphasis is designed to prepare students for teaching careers in colleges and universities while ensuring that they have the rigorous training in cutting-edge research essential for the competitive job market in academics or industry. Within the context of our Ph.D. program, faculty from the Department of Physiology and from the School of Education will develop specific curricula designed to meet the needs and interests of individual students. This additional training may range from a few selected courses on teaching methods to a minor or master's degree in Education. All students in this program will be provided an opportunity to lecture in an undergraduate physiology course with the guidance of a faculty teaching mentor. Applications are especially encouraged from undergraduate Biology majors from quality 4-year liberal arts programs where high quality teaching is the standard. A survey of Biology faculty search committees at teaching institutions suggests that individuals graduating with the Educator Emphasis will have a distinct competitive advantage in obtaining teaching-oriented faculty positions.

For more information on the Educator Emphasis program, please contact:

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IX. Qualifying Exams

Course, teaching requirements and laboratory rotations must be completed within the first 2 years following admission. Once course work is completed, students take a two-part qualifying examination at the end of their second year of study.

Preliminary Exam Part A

Part A of the preliminary examination is generally taken in the summer after the second year at a time selected by a rotating faculty examining committee. The current format is a take-home exam that that must be completed within one week (seven days). The preliminary examination tests the student's ability to assess experimental design, interpret published data, evaluate published conclusions, and synthesize new experimental directions. Questions will be prepared in three or four topic areas, from which students will choose two for examination. Students must answer one question in the area of cell and molecular physiology and another in systems physiology. In general, the exam requires use of the literature. The expectations of the students will be established when the exam is issued by a representative from the examining committee. Students are expected to show comprehension and critical thinking abilities at levels beyond those required in basic courses.

Preliminary warrants must be issued by the Graduate School before Part A of the examination can be taken. These warrants assure the student and the Program that all Graduate School requirements for the degree, except for successful completion of the examination, have been met. Any 'I' or 'P' grades must be cleared before the warrant is issued. Application to the Graduate School for the warrants should be filed with the Program Graduate Admissions Coordinator, Sue Krey, within three weeks of taking the preliminary exam Part A. Any deficiencies can then be detected and corrected.

Preliminary Exam Part B

Part B of the qualifying examination is a thesis research proposal that is presented to the student's thesis advisory committee. Part B is usually completed within 6 months of finishing Part A. This written document is based upon a thorough review of relevant literature to establish the basis for the problem to be studied, and includes a proposed plan of study and the student's preliminary results demonstrating feasibility of the work and plausibility of the hypotheses. Students should consult with their major advisor as to the format and presentation of the proposal to the committee.

Once Parts A and B are successfully completed, the student becomes a "dissertator" and is engaged in full-time research, culminating in presentation and defense of the doctoral thesis.

The Physiology Program does not accept students working toward a terminal Masters Degree.

X. Dissertator Status

After completing the core curriculum, minor requirement, and both preliminary exam part A and preliminary exam part B, the signed warrant is returned to the Graduate School. The student is officially admitted to candidacy for the Ph.D. degree and has then achieved "dissertator status." All requirements for dissertator status must be met prior to the first day of classes to be considered a dissertator for that semester.

As a Dissertator, each student registers for three credits per semester until the research thesis is filed in the Memorial Library. The Graduate School imposes a large fine if a three credit course load is not maintained while a dissertator. The three credit rule does not allow for any other courses outside of research. Specific information on the calculation of this assessment can be obtained from the Graduate School Ph.D. Office.

XI. Ph.D. Thesis

A thesis describing the results of original laboratory research is required for a Ph.D. degree. The thesis presents evidence of general laboratory proficiency, distinctive mastery of a special field and the ability to conduct independent laboratory investigation, along with a high degree of literary skill. The Graduate School Office can provide technical details about the preparation of a thesis and abstract.

A final oral examination is required. All other requirements for the Ph.D. degree must be completed before a student is eligible to take the final oral examination. The Graduate School issues a warrant to the student after verifying that all of these other requirements have, indeed, been met. This should be done several weeks before the date of the examination. This oral examination begins with an open research seminar and is followed by a defense of the thesis. The time and place of the examination are set by the student and the major professor, who acts as chairperson of the examining committee. Students are advised to meet with their thesis committees to obtain approval to write the thesis and set a date for the defense.

XII. Evaluation of Student Progress

Student progress is evaluated not only by the formal preliminary examinations, but also by yearly performance as judged by the Graduate Admissions Oversight Committee and First Year Advising Committee. A student may be dismissed from the program for failing to make satisfactory progress. Unsatisfactory progress includes failure to pass the

preliminary examination in a timely fashion, failure to fulfill course requirements, or poor research productivity. Records of actions taken by the faculty shall be documented so that uniform standards will be applied in all cases.

XIII. Libraries

There are more than two dozen major libraries on the Madison Campus. For information about the Health Sciences Library, including location and hours of operations please see:
http://www.hsl.wisc.edu/

For information on all UW Libraries please see:
http://www.library.wisc.edu/

XIV. Tuition and Fees

The cost of tuition is paid by the Department of Physiology or by the major professor.

After registering each semester, each student receives a bill for "segregated fees" reflecting the cost of educational services such as libraries, DoIT, recreational facilities, and student organizations.

XV. Financial Support

All students accepted into the program receive a research assistant stipend of $23,000 (pre-tax) annually to cover the cost of living expenses. Graduate students are not required to pay tuition (see above); however they are required to pay segregated fees. Segregated fees for Fall 2007 were $429 for non-dissertators and $162 for dissertators. Dissertator status is attained after all course work and preliminary examination requirements are met.

Students also are eligible to participate in many fringe benefits such as health insurance, life insurance, etc.