

STUDENT HANDBOOK

PHYSIOLOGY GRADUATE TRAINING PROGRAM

2017-2018

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GRADUATE STUDY IN PHYSIOLOGY

I. Introduction

The goal of this interdisciplinary, interdepartmental Physiology Graduate Training Program is to train the next generation of biologists how molecules, cells and organ systems interact. Powerful new tools in modern biology make it possible to link the cellular and molecular with integrative levels in physiological systems, such as the cardiovascular, respiratory, renal, endocrine, musculoskeletal, gastrointestinal, neurophysiological and metabolic systems.

This handbook provides basic information about the Physiology Graduate Training Program in Physiology for graduate students, their advisors and major professors. Students are responsible for knowing the requirements of the program as described in this document.

A few notes that the director and program coordinator want to include . . .

We are very happy to have you are part of our program. We have utmost confidence in your abilities as scientists and look forward to calling you colleagues. Should you ever have questions or concerns; be it about academics, research, or personal, you can ALWAYS come to us. We will work with you to mediate any concerns and make your time here as smooth as possible. Welcome to your program!

II. 2017-2018 Important Dates

Fall semester	
Eid-al-Adha*	September 1-5 (F-T)
Labor Day	September 4 (M)
Classes and laboratory rotations begin	September 6 (W)
Rosh Hashanah*	September 20-22 (W-F)
Yom Kippur*	September 29 (F)
Thanksgiving recess	November 23-26 (R-N)
Last class day	December 13 (W)
Exams	December 15 (F) - December 21 (R)
Commencement	December 17 (N)
Spring semester	
Martin Luther King, Jr., Day	January 15 (M)
Classes begin	January 23 (T)
Spring recess	March 24-April 1 (S-N)
Classes Resume	April 2 (M)
Passover*	March 30-April 7 (F-S)
Good Friday*	March 30 (F)
Last class day	May 4 (F)
Exams	May 6 (N) - May 11 (F)
Commencement weekend	May 11-12 (F-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. Weekly Seminar Course in Physiology 901

A seminar course will give students the opportunity to learn to present their research in physiology and learn about what others in the program are doing. Students are required to present one seminar in this series annually and to attend the seminar course regularly. All faculty, students and postdocs are welcome at the seminars. The program coordinator will request your presentation title one month in advance. In addition, the program coordinator will contact your advisor and committee and let them know that you are presenting. This is a terrific time to schedule your annual committee meeting.

IV. 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

Cellular and Molecular Neuroscience (Neuroscience 610)

Responsible Conduct of Research (OBGYN 955)

Seminar course (Physiology 901)

Spring

Begin research in thesis lab

Coursework

Human physiology (Physiology 435)

Elective Course

Seminar course (Physiology 901)

Summer

Continue thesis research

Year 2

Fall

Continue thesis research

Coursework

Elective(s)

Serve as a Teaching assistant

Seminar course (Physiology 901)

Spring

Continue thesis research

Coursework

Seminar course (Physiology 901)

Summer

Continue thesis research

Preliminary Exam Part A

Year 3

Continue thesis research
Preliminary Exam Part B
Seminar course (Physiology 901)

Beyond Year 3

Continue thesis research
Meet annually with thesis committee
Prepare and defend thesis
Seminar course (Physiology 901)
Advanced Responsible Conduct of Research (OBGYN 956)

V. Student Advising

Students are advised to meet with Program Director Donata Oertel and faculty mentors to discuss laboratory rotations, course requirements, and other issues pertaining to their graduate studies soon after their arrival on campus.

Thesis Advisor

Each graduate student should 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 course selection 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 end of the spring semester of the first year, each student should select a thesis committee in consultation with his or her thesis advisor. The committee comprises five faculty members, one of whom is the thesis advisor, and another who is outside the major area of the student's research.

Thesis Committee Meetings

The candidate meets with the committee at least once annually to evaluate progress and future research plans. It is the responsibility of the student to arrange these meetings. Students should report to the Program Coordinator when each meeting has taken place. Failure to have a committee meeting in a timely manner may result in a hold on registration.

Starting on 9/1/16, the thesis committee meeting must be chaired by someone who is NOT the faculty advisor. Instead, the chair should be appointed by the student. This chair may be the same or can change from meeting to meeting. The purpose of the change in policy is to provide the student ownership of the meeting and to avoid having the thesis advisor direct and answer questions. The chair will 1) Direct the meeting and 2) Fill out an evaluation of the student's progress that is to be turned in to the program coordinator to verify the meeting occurred and evaluate the student's progress. This form can be found at the end of this handbook or provided by the program coordinator.

Grievance Procedures

If grievances arise students should consult members of their thesis committee or the program director.

Information on the University's appeal and grievance procedures may be found on the University's website at: <https://grad.wisc.edu/acadpolicy/#grievancesandappeals>.

VI. Laboratory Rotations

Students supported by the program will complete 3 laboratory rotations in faculty labs in order to gain 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. Students who are admitted directly to a lab do not participate in rotations.

VII. Curriculum

The curriculum is designed to provide depth and breadth in physiology, as well as experience in critical reading and presentation of the literature. Students are required to take Physiology 901 every semester. Courses are selected with the help of the thesis committee and the program director, who may waive the requirement for one or more core courses and who may also recommend courses to fill in gaps in a student's background. The Graduate School requires students to take a minimum of 51 credits, 50% of which must be courses designed for graduate work, in order to qualify for the Doctoral degree. The decision about what electives to take should be made in consultation with the thesis advisor and members of the thesis committee.

Core Courses	
Physiology 901	Student Seminar, 1 credit every semester
Neuroscience 610	Cellular and molecular neuroscience, 4 credits
Physiology 435	Human Physiology, 5 credits
Statistics 541 or 571 or Oncology 675	Statistics, 3, 4, or 2 credits
OBGYN 955	Responsible Conduct of Research

Common Electives for Physiology Graduate Students	
Animal Sciences 875	Reproductive Patterns, Endocrine Physiology, Pregnancy, Parturition and Lactation 1-4 credits
Biochemistry 550	Topics in Medical Biochemistry, 2 credits
Biochemistry 602	Biochemistry Mechanisms-Regulation/Cell, 2 credits
Biochemistry 630	Cellular Signal Transduction Mechanisms, 3 credits
Biomedical Engineering 505	Biofluidics, 3 credits
Biochemistry 665	Biophysical Chemistry, 4 credits
Genetics 466	General genetics, 3 credits
Kinesiology 773	Cardiorespiratory Adaptations to Exercise and Environment, 3 credits
Kinesiology 774	Metabolic Responses to Exercise and Environmental Stress, 2 credits

Kinesiology 779	Human Muscle Function in Health and Disease, 2 credits
Math 801	Topics in Applied Math, 3 credits
Neuroscience 611	Systems Neuroscience
Neuroscience 625	Brain Cell Culture and Imaging: Lab Course, 2 credits
Neuroscience 675	Special Topics, 3 credits
Neuroscience 765	Developmental Neurobiology
Nutritional Sciences 875	Intermediary Metabolism of Macronutrients
Oncology 675	Readings in Cancer Biology, 2 credits
Pathology 750	Cellular & Molecular Biology/Pathology, 3 credits
PBS 500	Molecular Biology Techniques
Pharmacology 711	Neurotransmitter Receptor/Ion Channels, 2 credits
Physiology 533	Molecular Physiology, 2 credits
Physiology 675	Cell Signaling in Cardiac Disease, 2 credits
Psychology 556	Hormones and Behavior, 3 credits
Psychology 610	Stat. Analysis & Psychology Experiments, 3 credits
Zoology 570	Cell Biology, 3 credits

A GPA of 3.0 (on a 4.0 scale excluding research credit) for graduate level courses must be maintained. The Graduate School may put a student on probation if minimum standards are not met. Incomplete grades remaining beyond the next semester are considered unsatisfactory.

Research Credits

Along with formal coursework, students register for research credits.

VIII. Teaching

Communication is an essential component of academic training. The Physiology Graduate Training Program thus requires students to develop teaching skills. In addition to presenting seminars annually in Physiology 901, students are required to teach for a minimum of one semester. Generally students serve as Teaching Assistants in Physiology 335, Physiology 435 or Organismal Biology, part of the campus Biocore program. Students may also participate in the Educator Emphasis program if they wish.

IX. Qualifying Exams

Courses, teaching requirements and laboratory rotations should be completed within the first 2 years of study. Once course work is completed, students take a two-part qualifying examination.

Preliminary Exam Part A

Part A of the preliminary examination is generally taken in the summer after four semesters of coursework and is prepared by the Prelim Committee. Students will be asked to answer one question at the cellular and molecular level and one question at the systems level, chosen from four questions in various topic areas, and the written answers will be due one week later. The preliminary examination tests the student's

ability to assess experimental design, interpret published literature, evaluate published conclusions, and synthesize new experimental directions.

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 on the format and presentation of the proposal to the committee, but the proposal will generally be in the format of an NIH post-doctoral fellowship application.

Preliminary warrants must be issued by the Graduate School before Part B 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 graduate coordinator within one month of taking the preliminary exam Part B. Any deficiencies can then be detected and corrected.

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.

X. Dissertator Status

After completing the core curriculum, recommended electives, 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 with the Graduate School. The Graduate School imposes a fine if a three credit course load is not maintained while a dissertator. The three credit rule does not allow courses unrelated to 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, mastery of a field and the ability to conduct independent laboratory investigation, along with a high degree of literary skill. The Graduate School Office provides technical details about the preparation of a thesis and abstract.

A final thesis defense and oral examination is required after all other requirements for the Ph.D. degree are completed. At least six weeks before the oral examination, the student will need to contact the program coordinator to receive a warrant that verifies that all other requirements have been met. The oral examination begins with an open research seminar and is followed by a defense of the thesis before the thesis committee. 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 annual meetings of the student's thesis 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.

XIII. Stipend, Tuition and Fees

The cost of tuition is paid by the Physiology Graduate Training Program or by the major professor. In 2017, the program will recommend student receive stipends of \$27,000 (pre-tax) to cover the cost of living expenses. 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. Segregated fees (Fall 2017) are \$630 for non-dissertators and \$268 for dissertators.

XIV. Contacts

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Mathew Jones
Joan Jorgensen

Timothy Kamp
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Dudley Lamming
Youngsook Lee
Jon Levine
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Ahmed Mahmoud
Peter Nichol
Denise Ney
Donata Oertel
Luis Populin
Carter Ralphe

Gail Robertson
Avtar Roopra
Ari Rosenberg
William Schrage
Bill Sugden
Masatoshi Suzuki
John Svaren
Raghu Vemuganti
Jyoti Watters
Beth Weaver
Milo Wiltbank
Wei Xu

ANNUAL EVALUATION of STUDENT'S PROGRESS to DEGREE
Physiology Graduate Training Program

The purpose of this evaluation is to provide a record for the student, thesis advisor and PGTP about a student's progress to degree.

Student:

Please fill out the upper part of the form and make sure the PGTP office receives the completed form after each meeting of the Thesis Committee.

Student's name: _____

Years in the program: _____

Date of meeting: _____

Student's advisor: _____

School/College Affiliation of Advisor: _____

Committee Members & School/College

<u>Name of Member</u>	<u>School/College</u>	<u>Name of Member</u>	<u>School/College</u>
1.		4.	
2.		5.	
3.			

Additional/Optional Members: _____

Thesis Advisor:

Scale for responses: 5 = very good, 4 = good, 3 = adequate, 2 = poor, 1 = very poor

Rate the student's progress using the scale above:

5 4 3 2 1

COMMENTS: