

**GRADUATE PROGRAM IN PHYSIOLOGY**  
**PROGRAM POLICIES & PROCEDURES (Current Version 10/28/2009)**

The Graduate Program in Physiology is designed for students interested in the integrated function of living systems. Major research areas include musculoskeletal science, neurophysiology, pulmonary and sensory physiology exercise science and endocrinology. The Physiology Program is an ideal vehicle for students looking to apply basic science research techniques to clinically relevant biomedical problems such as bone tumors, diabetes, osteoporosis, kidney disease and lung disease. Experimental approaches range from studies on animals and isolated tissues to studies of cellular and molecular events. Scientific inquiry may include the complex interactions of systems in the whole individual, the orchestration of processes integrating organ and cell function, and/or the integration of molecular events within individual cells. Students enrolled in this Program can earn Ph.D. or an M.S.

Student progress and success in the Graduate Program in Physiology is strongly supported by the faculty members and the administration. It is marked by performance in various venues: required and elective coursework, laboratory activities (rotations and dissertation research), the drafting of a polished dissertation describing original research, and various examinations including the Qualifying Examination and Dissertation Defense.

Candidates for the Doctor of Philosophy degree in the biomedical sciences function under the general administration of the College of Graduate Studies and the direct supervision of the faculty of this College. Programs comply with the requirements for an advanced degree set by the Graduate Council and the Graduate Faculty Organization of the College of Graduate Studies. The Graduate Program in Physiology follows, at a minimum, all established policies delineated in the Student Handbook of the College of Graduate Studies. Below are some policies of particular note excerpted from the Student Handbook. The Graduate Program in Physiology reserves the right to stipulate policies or procedures more rigorous or specific than those in the Student Handbook. Where they exist, such Program policies and procedures have been included in this document.

**Course requirements for a doctorate in Physiology**

A total of 90 credit hours are required for the Ph.D. degree. A minimum of 30 credit hours is devoted to research and a minimum of 30 credit hours must be taken in Program-approved

didactic course work. Changes in curriculum and/or Program requirements are at the discretion of the Program, as deemed necessary, and may be made without prior notice. A student's Program requirements are deemed to be those in place at the time the student joins the Program. The Graduate Program Committee and Program Director are responsible for determining that a student has fulfilled all program requirements. Prior to registering for each semester, graduate students who have been accepted into the Program must meet with the Program Director to discuss his/her progress and secure a signature on the registration form.

A minimum course grade of "C-" is required for graduate credit. An overall "B" average (3.0 grade point average) must be maintained. Each student must earn B- grade or above in all Physiology courses. Remediation is at the discretion of the Graduate Program Committee and Program Director. Grades in dissertation research credit hours (designated as the 700 series) are not included in the GPA. Other courses, as approved by the Graduate Council, which are evaluated "satisfactory" or "unsatisfactory" are also not included in the GPA if successfully completed but may be credited towards fulfilling the didactic requirements of a student's degree program.

Students are expected to gain direct experience (i.e., rotate) through three laboratories during their first year in graduate studies in accordance with guidelines of the College of the Graduate Studies. The primary goal of these rotations is to find a Mentor to guide their dissertation research. A secondary goal is to gain experience with different scientific approaches and methodologies. A maximum of four laboratory rotations is allowed prior to acceptance into the Graduate Program in Physiology other than for exceptional circumstances with express permission of the Director. If a student is unable to match with a lab after four rotations, s/he will not be accepted into the Graduate Program in Physiology.

Students are expected to attend all program-sponsored seminars. Students must present one seminar per year. Once a student has joined the Graduate Program in Physiology, s/he must present a seminar annually. Before s/he passes the Qualifying Examination, a half hour seminar is expected. Following success on the Qualifying Examination, the student is required to present a one hour seminar each year. Failure to participate in the seminar course (through attendance and presentation) would lead to not be able to register for the next semester. Students are excused from presenting, but not from attending, during the semester they have

scheduled their defense.

Residency requirement: For the Ph.D. degree, at least one year (24 credit hours earned during a single academic year) must be spent in residence at the SUNY Upstate Medical University campus. A student must be registered during the semester when s/he defends his/her dissertation.

Once the student has been accepted into the Graduate Program in Physiology, his/her progress will be monitored regularly by the Graduate Program Committee as well as by the student's Mentor. Graduate students are encouraged to seek the guidance of the Mentor, the Program Director, the Department Chair, and/or other faculty members as needed.

### **Qualifying examination**

The student becomes a candidate for the doctoral degree after passing a qualifying examination administered by a committee of the College of Graduate Studies.

#### *Prerequisites*

1. Each doctoral program shall define required courses and other prerequisites which must be satisfactorily completed prior to the qualifying examination.
2. In addition to these minimal requirements, the student's mentor may establish other prerequisites appropriate to the course of study undertaken by the individual student.

#### *Scheduling*

The graduate program in which the student is enrolled shall schedule the examination for the end of the student's second year (or soon thereafter); exceptions require approval by the Dean.

#### *Qualifying Examination Committee*

The proposed Qualifying Examination Committee is formed by the graduate student in consultation with the Mentor. The proposed committee is submitted for approval to the Dean of Graduate Studies, who will also assign the Committee Chair. The Mentor and student, in consultation with all the other committee members, will determine dates and times at which they can all participate in the exam. These dates and times must be communicated by the dissertation Mentor, in writing, to each committee member who, in turn, must confirm in writing

his/her continued commitment to participate. If a committee member cannot devote the required hours on the dates and times specified, either that committee member must be replaced with another faculty member approved by the Dean or other dates and/or times must be selected which allows all the committee members to fully attend. If a committee member later finds s/he cannot fully participate in the entire exam and it is not feasible to find a replacement, the oral exam can go forth with a few as four committee members, one of which must be the Mentor, provided the remaining committee members and the student agree to do so.

#### *Nature of Qualifying Examination*

The examination shall cover areas appropriate to the student's training and research interests. The student shall provide a list of his/her undergraduate and graduate courses and training, and a brief summary of any research undertaken, at the time the request for examination is made. At the discretion of the Graduate Program in Physiology, the examination will consist of a written component, and an oral component.

*Written component.* The format for the Graduate Program in Physiology is: a research proposal on the candidate's research area. The research proposal will be 15 pages in length (including figures). The composition of the research proposal will include a description of an area to be researched. This description will (a) identify the specific aims and hypotheses to be addressed in the specific research (estimated length: one page), (b) provide the background and significance of the proposed research (estimated length: seven pages), (c) describe the preliminary studies performed and results of these studies (estimated length: two pages or less), and (d) describe the experimental design and methods used to address the specific aims (estimated length: five pages). The latter shall describe not only the methods, but also the potential pitfalls for these methods, alternative approaches, and predicted outcomes.

If the student took the Grant Writing course, then s/he will have may use this grant as a base for the Qualifying Examination with the inclusion of an additional Specific Aim. In formulating the additional Aim, the student may not consult with the Mentor or other faculty members. The Committee Chair and student schedule a time for the examination. The Chair also specifies the time at which written material (research proposal) is to be turned in to the Qualifying Examination Committee.

*Oral component.* The oral component of the Qualifying Examination will focus on the written document, but student should be able to demonstrate a comprehensive appreciation of physiology. The Qualifying Examination Committee shall meet at the call of the Chair within two (2) weeks after the completion of the written section at which time the student shall be examined orally. At the end of the oral examination, the student shall be evaluated on the basis of his/her performance on both the oral and written sections, and the Committee shall take action as outlined below.

*Voting procedures.* Each member of the Qualifying Examination Committee, including the Chair, is entitled to one vote. For a committee member's vote to be counted, s/he must have participated in the entire exam and his/her vote must be cast in person. To reach a decision on any of the motions listed below, more than one-half of the committee members present must approve the motion. The vote shall be by ballot. Motions will be for (a) approval without reservations, (b) approval with Honors (unanimous decision), (c) approval pending completion of recommendation(s), (d) failure, or (e) delay final action for no more than thirty (30) days for further examination or in order to take other action deemed appropriate by the Qualifying Examination Committee. Further examination, may be either written, oral, or both, and may cover all or selected areas. Should the Committee delay decision for re-examination or other appropriate action, final decision to approve or disapprove under this section rests with the Qualifying Examination Committee. If none of the above motions receive more than one half of the Committee's votes, the student is failed by the Qualifying Examination Committee.

Students are referred to the Student Handbook for additional policies regarding the Qualifying Examination.

### **Dissertation research**

Within six months of successfully passing the Qualifying Examination, the student will form a Dissertation Advisory Committee. This Committee is composed of a minimum of three members, one of whom is the Mentor. The Dissertation Advisory Committee remains active throughout the student's candidacy and forms the core of the Dissertation Defense Committee. The Advisory Committee may include an off-campus member from another institution if that member is a recognized authority in the field of the dissertation research. Both the Mentor and

the Program Director must approve in writing the final membership of the Dissertation Advisory Committee at the time of formation. [Note: If a student chooses to also include an off-campus committee member, the Program commits only to cover the costs of lodging, meals, and mileage (not airfare) for that member to attend the Dissertation Defense. The costs of outside member travel to regular meetings of the Dissertation Advisory Committee, and any air travel, will be covered by the Mentor and/or the outside Committee member.]

Students must hold a Dissertation Advisory Committee meeting every six (no more than eight) months. It is the responsibility of the student to set up the meeting and coordinate the committee members' attendance. Students should make every effort to enable attendance by most committee members at each meeting; attendance by half or fewer committee members at a meeting may prompt a request by the Program Director for an additional meeting. The first meeting of the Dissertation Advisory Committee will follow this schedule. Students who do not schedule a Dissertation Advisory Committee meeting within the designated time frame will be prevented from registering for the following semester until the meeting is held.

At the conclusion of each Dissertation Advisory Committee meeting, the Mentor will complete a detailed evaluation form provided by the Program. The completed evaluation form will be signed by both the Mentor and the student. The original form will be delivered to the Program Office for distribution to the student and the Dissertation Advisory Committee members.

### **Dissertation**

An essential requirement for the doctoral degree from the Graduate Program in Physiology is the successful completion of a written dissertation followed by an oral defense. In keeping with the high academic and educational objectives of the College of Graduate Studies, the dissertation should constitute a cohesive scholarly work that reflects a student's original contribution to the field of study. The dissertation should include a review of the relevant scientific literature that establishes the context in which the student's research work may be assessed. It should include a record of his/her laboratory experience and his/her intellectual contributions to the field. It should be clearly written and follow standards of superior scientific scholarship. All members of the Dissertation Advisory Committee must give permission to the student to write before the defense can be scheduled, indicated by their signatures on the evaluation form expressing permission to prepare the dissertation. The written dissertation

must conform to both the College of Graduate Studies and Program formatting rules. Compliance will be determined by a designate in the Program Office. The "College of Graduate Studies Policy for the Written Dissertation" may be obtained from the Graduate Studies Office, Weiskotten Hall, Room 3122.

#### *Composition of the Dissertation Defense Committee*

The Dissertation Defense Committee shall consist of at least the six members. No more than three members may have a primary appointment in a single department and one must be an expert from outside the institution. The final composition of the Dissertation Defense Committee must be approved and appointed by the Dean, who will also assign the Chair, on recommendation of the Mentor and Program Director.

#### *Scheduling the defense and acceptability of dissertation*

The dissertation Mentor and student, in consultation with all the other committee members, will determine a date and time at which they can all attend the entire defense proceeding. This date and time must be communicated by the dissertation Mentor, in writing, to each committee member who, in turn must confirm in writing his/her continued commitment to attend. If a committee member cannot devote the required hours on the date and time specified, either that committee member must be replaced with another faculty member approved by the Dean or another date and/or time must be selected which allows all the committee members to fully attend. Having determined the dissertation date and time, if a committee member later finds s/he cannot fully participate and it is not feasible to find a replacement, the defense can go forth with as few as four committee members, one of which must be the dissertation Mentor, provided the remaining committee members and the student agree to do so.

A complete dissertation shall be submitted to the members of the Dissertation Defense Committee two weeks prior to the defense.

#### *Nature of the Defense*

Prior to the defense in front of the Dissertation Defense Committee, the candidate will present the dissertation material in a public, oral seminar. The defense shall then consist of an oral presentation to the Committee of the most important findings and of questions by the examiners to establish the validity and significance of the dissertation/thesis submitted, as well as the

candidate's ability to explain and defend his/her methods, findings, and conclusions. The defense shall be open to interested individuals. The post-oral defense discussion and voting are only open to members of the Dissertation Defense Committee.

The Program Director can choose to attend the defense, post-oral defense discussion, and voting as an observer. S/he can not participate in the voting. The Program Director is to provide information re the procedure (as distinguished from the evaluation) and such issues must be addressed to the Dissertation Defense Committee after the student has left the examination room, but before a final vote is taken. In the rare case that concerns about the procedure cannot be resolved, the defense will continue as usual with the Committee's final vote remaining unofficial pending a review of the Program Director's concerns by the Dean.

#### *Voting Procedures*

Each member of the Dissertation Defense Committee, including the Chair, is entitled to one vote. For a Committee member's vote to be counted, s/he must have participated in the entire defense and his/her vote must be cast in person. The vote shall be by ballot. The vote can be for (a) approval, (b) approval pending completing of recommendations, or (c) disapproval with recommendation for additional specified work to correct designated deficiencies. If the dissertation is approved, it can be approved with honors. This approval requires a high quality performance in each of the four elements of the dissertation defense: the oral presentation (seminar), oral defense, quality of dissertation writing and quality of research. To determine whether this level of performance has been achieved, the three categories will be graded separately as follows: 1) inadequate, 2) pass, 3) above average, and 4) outstanding. A final score will be determined as the average of these grades from the Committee members. Students achieving a 3.75 or higher will be awarded the "With Honors" designation.

To reach a decision on any of the first three motions listed below, more than one-half of the committee members present must approve the motion. If none of the above motions receives more than one-half of the votes of the members of the Committee, the student is failed by the Committee. The future status of the student is determined by Graduate Council.

#### *Final Requirements*

Students not in residence must complete their degree requirements within 6 months of leaving



the dissertation research laboratory. If the six months is exceeded, the degree is not awarded unless there is permission by petition to the Dean of the College of Graduate Studies. Before the degree can be awarded, the student must deposit at the Dean's Office, at least three copies of the completed, approved, dissertation (the original plus two duplicates) with a completed Binding Form. The bound original plus one copy of the dissertation will remain in the library, and one bound duplicate will become the property of the student's program. The cost of having additional copies bound will be the responsibility of the student.

### **Miscellaneous Issues**

#### *Time limitation for completion of Program*

The purpose of this limitation is to avoid undue delay in the completion of the degree requirements and to insure that course work and research is not outdated before the degree is granted. For the doctoral degree, no more than seven years may elapse between initial admission to the College and completion of degree requirements. If this time limit is exceeded, the degree is not awarded unless there is permission by petition to the Dean of the College of Graduate Studies. Faculty Mentors are expected to closely monitor student progression and regularly communicate to their students the expectation that they complete their degrees in a timely manner.

#### *Authorship on publications*

Authorship on papers is based on participation in multiple aspects of a research project. This includes (a) generation of the idea, (b) formulating the experimental design, (c) generating and analyzing the data, and (d) active participation in the interpretation of the data (including in the context of the literature) and preparation of the manuscript. First authorship can be earned by drafting the manuscript and preparing the figures. It is advised that authorship on papers should be worked out in advance.

#### *Ethics and academic integrity*

SUNY Upstate Medical University expects its members, including students, to conduct themselves in a mature, responsible and ethical manner at all times. Each member must respect the rights and privileges of every other member and their fellow citizens. Definitions and examples of academic dishonesty are described in the Student Code of Conduct and the

Student Handbook.

### **Requirements for a Master's degree in Physiology**

Students in the Master's degree Program in Physiology must matriculate in the Fall semester when they will begin their coursework. They must take the core curriculum, one or two laboratory rotations, and either Systems Physiology (PHY657) or Neuroscience (N601). The Program requires a minimum of 20 course credits, thus, additional higher level courses will be taken. These courses will be determined by the student in consultation with his/her Mentor. Each Master's degree student must demonstrate the competency in coursework by maintaining a "B" or better grades in all courses taken after the core curriculum. Each Master's degree student is expected to attend the seminars sponsored by the Department of Neuroscience and Physiology or the home department of his/her Mentor.

The student should complete a thesis research project. This will be overseen by the Mentor and the Advisory Committee, and then s/he must present the work in written form (a thesis), give a public presentation of the work, and then defend the thesis orally. The Mentor is chosen by the end of the first Fall semester. Students must organize an Advisory Committee at the beginning of the Spring semester of the first year. The Committee includes the Mentor, one faculty member from the Department of Neuroscience and Physiology faculty, and one faculty member from another department. The Advisory Committee meets at the end of the spring semester of the first year and subsequently every four months to evaluate the progress of student's research. A minimum of three meetings is required during the course of his/her study. The Mentor will complete a Progress Report that includes an evaluation of the student's ability to discuss and present his/her research work and the literature. The Committee will determine the student's "continuation" or "dismissal" from the Program.

An approval from the Advisory Committee is required prior to the preparation of the student's Master's thesis. The written thesis, in final form, shall be submitted to the committee members two weeks prior to the defense.

A Defense Committee will comprise a minimum of three members; this Committee can be the same as the Advisory Committee. At least three members must be present at the defense. A

successful oral defense of the thesis is required for granting a Master's degree. At the defense, the student must demonstrate the quality and quantity of his/her research, which can be at least part of a research paper. The Defense Committee will either "Approve," "Approve pending completion of recommended change(s)," or "Fail" the defense. If failed, the future status of the student will be determined by Graduate Council.

A maximum of 3 years is allowed for the student to complete his/her Master degree program.