PennState
Huck Institutes of
the Life Sciences

Intercollege Graduate Degree Program in Integrative and Biomedical Physiology

2026-2027 Student and Faculty Handbook

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General Requirements

Introduction

Integrative and Biomedical Physiology is an intercollege graduate degree program designed to provide students with an integrated series of courses encompassing both the fundamentals of physiology and advanced concepts in a specialized area. The formal curriculum is complemented by research training that emphasizes a comprehensive perspective and understanding, from molecular mechanisms of control to integration at the cellular, tissue and whole organism level. Specific details related to this handbook and other aspects of the program can be found here. www.huck.psu.edu/graduate-programs/integrative-and-biomedical-physiology

Prerequisite Courses

A mammalian physiology course at the undergraduate level associated with a laboratory experience is desired. In addition, biochemistry and a basic cell and molecular biology course at the undergraduate level are preferred. Deficiencies in chemistry, biological science, mathematics (through a second course in calculus), and physics must be made up early in the student's graduate program.

Seminars

All students, except those enrolled in PHSIO 590, are required to attend at least 8 one-hour technical seminars each Fall and Spring semester until graduation (4 semesters of which must be assigned credit hours). After the 1st year, it is up to each student in consultation with the faculty advisor to determine which seminars are of the most interest and value to his or her professional goals. There are various seminar series in Animal Science, Biochemistry, Cell and Molecular Biology, Kinesiology, Molecular and Cellular Integrative Biosciences, Neuroscience, and Nutritional Sciences, which are of particular relevance. By the last week of the semester, students are required to submit to the Graduate Program Chair via the Staff Assistant, the seminar series attended.

English Proficiency Requirement

The English Requirement for International students is that prescribed by the J. Jeffrey and Ann Marie Fox Graduate School at Penn State. Depending on the graduate program, all entering international students and students for whom English is not their primary language, whether or not they hold a Teaching Assistantship, will be required to take the American English Oral Communicative Proficiency Test (AEOCPT) which is administered by the University's Department of Applied Linguistics. Given at the beginning of fall and spring semesters, students are required to pre-register for the AEOCPT. The test scores from the AEOCPT are posted on the University's Administrative Information System (AIS) secure website. Below is the course of action for the AEOCPT score ranges.

AEOCPT SCORE	REQUIRED COURSE	PROGNOSIS
250 - 300	None	Student may teach with no restrictions.
200 - 249	ESL 118G	Must pass the Interactive Performance Test (IPT) before teaching.
150 – 199	ESL 117G followed by ESL 118G	Two semesters of ESL, then IPT before teaching.
<150	ESL 115G, then ESL 117G, then ESL 118G	Three semesters of ESL, then IPT before teaching.

Students who are required to enroll in ESL courses must complete the ESL requirement by the end of the second semester of residency. Students who fail to satisfy this requirement may be terminated from the respective graduate program, at the discretion of the graduate program chair.

Safety Training Sessions/Examinations

Within the first semester of residence, all students are required to take/pass chemical waste disposal training sessions offered at the respective campuses, as well as complete SARI training (see below). With the exception of SARI and as noted below, these sessions occur during Fall Orientation of the 1st year. Students must present documentation of successful completion to the Program Assistant (Tasha Marasco, tme119@psu.edu). Animal or human subjects training will occur during selected rotations and is under the direction of individual supervisors.

Chemical safety trainings will be completed during the Fall Huck Orientation session(s). Radioisotope training is laboratory specific, and at the discretion of individual laboratory directors as needed. All environmental health and safety issue related guidelines can be found at https://ehs.psu.edu/laboratory-and-research-safety.

Animal or human training modules can be found at https://researchsupport.psu.edu/orp/.

Annual Performance Evaluation

All students will be continually evaluated for both academic performance and compliance with program requirements. The evaluations will be performed by the Integrative and Biomedical Physiology Program Chair until completion of the Qualifying Exam, and then afterwards by the Chair of the Thesis Committee, but reviewed by the Program Chair. Students will complete the **Annual Graduate Student Activity Report** (GSAR), which will originate from the Huck Institutes Graduate Office to be completed in June of each academic year (https://grad-activity.science.psu.edu/). These evaluations are integral parts of the student's professional development and provide a formal mechanism for students and their advisors to broadly review the student's progress and discuss current and future goals. Regular committee meetings are also required after the first year (expected 2 per year). Continued financial support of each student will be dependent on satisfactory progress as stated in the admission offer letters.

Grade Point Average

Credit hours are earned only for the grades A, B, and C. However, all A and F grades are included in the computation of the grade point average. Grade points are assigned as follows:

A = 4 (above average graduate work)
B = 3 (average graduate work)
C = 2 (below average graduate work)
D = 1 (failing graduate work)
F = 0 (failing graduate work)

Grades D and F are not acceptable for graduate credit. Only one grade of C is allowable. If a course is repeated, then both grades are used in computing the cumulative grade point average.

Unsatisfactory Scholarship

Students are required to have a minimum grade-point average of 3.0 for the doctoral qualifying examination, admission to the comprehensive examination, thesis defense, and graduation. One or more failing grades, a cumulative grade-point average below 3.0, or failing any of the examinations may be considered evidence of unsatisfactory scholarship and be grounds for dismissal from the University (see the Appendix III of the Graduate Programs Bulletin (http://undergrad.psu.edu/aappm/G-9-academic-integrity.html).

Problem/Conflict Resolution

Graduate students occasionally have difficulties with their advisors, their programs or an academic matter associated with their programs. The first step in problem resolution is always to talk directly with your advisor or the involved party. If the problem is unresolved, the Integrative and Biomedical Physiology program chair should be contacted (Dr. Shearer), who will act to arbitrate further discussions between faculty and students. If satisfactory resolution remains elusive, the next step would be to work with Dr. David Puts, Associate Director for Graduate Education (dap27@psu.edu; 814-359-9102); and/or with the Dissertation Committee (if post-qualifying). Dr. Puts can assist with arbitration through the leadership of the Huck Institutes of the Life Sciences. Importantly, you can reach out to the Fox Graduate School dean's office (graddeansoffice@psu.edu) as they can provide guidance and maintain neutrality if issues remain unresolved. Issues discussed during meetings will remain confidential if requested by the student. Please see GCAC-802 Procedures for Resolution of Problems (REVISED - Effective Fall 2025) - J. Jeffrey and Ann Marie Fox Graduate School at Penn State for additional Fox Graduate School policy details.

Assistantships and Student Status

Students with teaching or research graduate assistantships must be registered as full time students to maintain stipend eligibility. Full time status is considered either a minimum of nine credits each fall and spring semester (pre-comprehensive exam) or PHSIO 601 (post-comprehensive exam). The assistantship appointments typically originate with the department of the faculty advisor. If no faculty advisor has been identified, as likely the situation with first year doctoral students, please consult with the Integrative and Biomedical Physiology Program Chair. It is the responsibility of the faculty mentor to secure funding after the 1st year for individual students. Limited support may be available through the Integrative and Biomedical Physiology IGDP, at the discretion of the Program Chair. Questions regarding student registration status can be directed to Tasha Marasco in the Huck Graduate Education Office.

Assistantship Responsibilities Including Outside Employment Prohibition

When you accept a graduate assistantship you will sign a document that has lots of information in it about the responsibilities associated with the assistantship. While it is tempting to skip the fine print, there are some important items in there. One of these that comes up fairly frequently is the question of whether students on appointments can take on additional paid work. The graduate school policy states: "A graduate assistant may accept concurrent employment outside the University only with prior permission from the head of the unit providing the assistantship and the head of the student's graduate program, with the primary considerations being that the additional hours not compromise the student's academic progress, or their assistantship responsibilities." For the full policy and other information about assistantships see: https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-901-graduate-assistants.

Another policy to take a look at is the one on Remote Assistantships: https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-901-graduate-assistants/p3-remote-graduate-assistantship-procedure.

Vacation Guidelines and Leave Policy

Full-time graduate students in the PHSIO Graduate Program who receive stipends must get permission for all absences from the laboratory. Vacation leave should be arranged with the PHSIO Graduate Program Chair (1st year students) or dissertation advisor (2nd year and above students). What are the general guidelines for how much leave is appropriate? Each time you are appointed to receive a stipend you sign a Terms of Offer letter, which is a legally binding agreement. This letter includes information about when during the semester you are expected to perform your assistantship duties. The graduate school has a web page that goes through what is in this letter about time off and when it may or may not be flexible: https://gradschool.psu.edu/funding/information-for-graduate-assistants. The bottom line is that in the Terms of Offer you are not expected to perform assistantship duties for the University Holidays (7 days winter break between Fall and Spring semester, Labor Day, MLK day, Memorial Day, Juneteenth, Independence Day=12 days) and one additional week each semester (so 10 more weekdays total). If you add these up, you get 22 weekdays off (the grad school number is 19 as they do not count the 3 in the summer as summer appointments vary); this is a good starting point for thinking about what a reasonable amount of time off over the year looks like.

Days spent attending scientific meetings or training conferences will not count as vacation time (extra days before or after the meeting would count as vacation). Students may take more than the regularly allocated vacation time in any given calendar year for special travel or activities if they have the **consent of their research advisor** and they take correspondingly fewer vacation days in the preceding and/or following years.

Students **must inform their research advisor (or the Graduate Program Chair if a research advisor has not yet been assigned)** of their vacation plans no fewer than 15 days prior to the first day of their planned vacation. It is recommended that the student submits their vacation request to their advisor in writing and also obtains written approval of the vacation time (an email will suffice). While it is expected that the advisor/Program Chair will approve most reasonable requests, the advisor/Program Chair may deny the requested absence if there are particular circumstances that warrant such a denial. Such denials should not, however, become an ongoing impediment to any given student being able to use all of their annual vacation time in a reasonable fashion.

Students should consult with their research advisor regarding any specific guidelines relating to vacation or laboratory absences that apply to research group members of the particular advisor. Common sense policies and procedures should apply. Note that vacation time should be planned to avoid interference with specific duties including teaching and classes.

Information about longer leaves

If a graduate assistant (defined as TAs, RAs, GAs or students on fellowship) is unable to fulfill the duties of a graduate appointment because of illness, injury, pregnancy or adoption, please refer to the policy on Leaves of Absence. https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-906-graduate-student-leave-of-absence/

In addition to this general leave policy, the graduate school has a Parental Leave policy for students. For more information about this type of leave, please see: https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-908-graduate-student-parental-leave

If the source of funding is external to the University, **prior to granting the leave**, it will be the responsibility of the PI to be sure that the commitments to any grant or contract are fulfilled by the PI, and to be sure that the funding agency rules allow the implementation of such a leave. Note: most funding agencies defer to the policies of the institution. There are some special programs e.g. NIH and NSF fellowship, which have defined policies. In those cases, the agency policy will prevail.

If it becomes necessary to terminate funding of a graduate assistant, the individual should be referred to the Student Insurance office (302 Student Health Center; 814-865-7467) to be accurately informed of the implications of the termination for health insurance coverage, and of the mechanisms available for coverage once that provided by their stipend benefit is no longer in effect. It is recommended that such referral be documented in writing to the graduate assistant, in addition to any verbal provision.

Programs should provide a mechanism for a graduate assistant to take unpaid leave for medical reasons of no more than one calendar year. Such a leave would not guarantee that support would be available when the student returns to full time graduate work. However, the program should not count the leave against the student's time to degree, and should notify the Fox Graduate School in writing of the approval of the leave, its circumstances (i.e., for medical/health reasons) and its duration. Before a leave of absence is discussed with a foreign national graduate assistant, the program chair or mentor needs to contact the Global Programs Office (DISSA) (814-865-6348) to insure consistency with federal regulations.

Thesis/Dissertation Submission and Exit Interview

Upon completion of the degree, students are to provide the Integrative and Biomedical Physiology Program Chair with a paper copy of their thesis/dissertation (unbound is acceptable). Students will also participate in a Physiology Program Exit Interview and be asked to complete an Exit Survey by the Huck Institutes. For the latter, students will be contacted by the Huck personnel for the completion of the survey.

Applying for Graduation

At the beginning of the semester that you intend to graduate, visit LionPATH, following the instructions for *Notifying the University of Your Intent to Graduate* found at the Registrar's website: (http://www.registrar.psu.edu/graduation/intent.cfm). Helpful information regarding important graduation deadlines can also be found at http://gradschool.psu.edu/academics/academic-dates-and-deadlines.

Teaching (optional)

Teaching assistant (TA) opportunities are available for Integrative and Biomedical Physiology students who would like to improve their teaching skills and gain practical teaching experience in a classroom setting. Students who are interested in this option should seek advice early on from their advisor and Program Chair to help decide on the best time for this experience. In order to TA, students must take a teaching training course such as BIOL 893 (Experiential Teaching in Biology, 2 cr) or the non-credit New Instructor Orientation (NIO) offered by the Schreyer Institute of Teaching Excellence. International graduate students must pass an English proficiency exam (see English Proficiency section) before taking on any teaching duties. Any students who would like additional teaching experience and recognition of commitment to college teaching may consider earning a Teaching Certificate from the Fox Graduate School. Information about the requirements for the Fox Graduate School Teaching Certificate can be found at https://gradschool.psu.edu/student-support/professional-development/penn-state-cirtl-teaching-certificate.

Integrative and Biomedical Physiology Graduate Program Ph.D. Requirements

General Information

General requirements for completion of the doctorate degree are based upon a period of semesters of full-time on-campus residence, passing the Integrative and Biomedical Physiology qualifying exam, satisfactory completion of physiology course requirements and university credit requirements, fulfillment of a communications requirement, passing of a comprehensive examination, and the writing and satisfactory defense of a research thesis. No specified number of courses completed or credits earned will assure attainment of the doctorate. A doctoral program consists of such a combination of courses, seminars, individual study and research as meets the minimum requirements of the Integrative and Biomedical Physiology Graduate Program and as approved by the Dissertation Committee for each individual student. Official entry into the doctorate does not occur until a student passes the Integrative and Biomedical Physiology qualifying exam. A Master's degree is not a prerequisite for the Ph.D. degree.

New graduate and M.D./Ph.D. students should become acquainted with the Integrative and Biomedical Physiology Program upon entry (https://www.huck.psu.edu/graduate-programs/integrative-and-biomedical-physiology). Efforts should be made to meet other graduate students and especially your assigned peer mentor. The entering student should also become familiar with members of the faculty and the general thrust of each faculty member's research. Semester meetings for Integrative and Biomedical Physiology Program graduate students (time to be determined by the student representative) serve as an important opportunity for students to interact and share experiences.

Bi-Semester Physiology Student Meetings: It is expected that all graduate students in the Integrative and Biomedical Physiology IGDP will attend scheduled student meetings, arranged at a mutual time, for a period of scientific exchange and dialogue, often focusing on career development issues. The format for each meeting will be determined by student representatives in consultation with the Program Chair. The Program Chair should be notified if students are unable to attend a meeting.

Huck Graduate Student Advisory Committee (HGSAC)

Integrative and Biomedical Physiology students are encouraged to join and participate in activities sponsored by the Huck Graduate Student Advisory Committee (HGSAC). HGSAC is a committee of ~15 students representing all of the graduate programs in the Huck Institutes of the Life Sciences. Its mission is to broadly promote graduate student interests, facilitate communication between students and faculty, and help guide students in their career plans. More information is available at: https://www.huck.psu.edu/resources/students/graduate-students/graduate-student-involvement/huck-graduate-student-advisory-committee.

Individual Development Plan (IDP): Students are required to create an individual development plan using the myIDP website (http://myidp.sciencecareers.org) in year 2, with revisions made yearly thereafter. Students are required to attend yearly IDP planning sessions. Attendance is documented to the Program Chair. Students will be afforded many opportunities throughout the year for career development activities and are strongly encouraged to participate as schedules permit.

Regular Doctoral Committee Meetings: Starting in the second year, students are expected to meet with their doctoral committees regularly, at least once per year, and preferably twice per year. Please utilize the form on page 17 to document that the meeting has occurred and satisfactory progress has been achieved. The form should be submitted to Tasha Marasco (tme119@psu.edu) each time there is a committee

meeting. Failure to have regular committee members could jeopardize graduate education funding. The doctoral committee must be formally declared to the Fox Graduate School and Tasha Marasco will process this information once provided to her. Also note that in accordance with the Fox Graduate School Policy GCAC-602, https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-602-phd-committee-formation/, a student's doctoral. Committee should be 'officially' formed as soon as possible after the student has secured an adviser, but in no event later than one calendar year following the date of the student's successful completion of the Qualifying Examination unless an alternative timing is approved through the Graduate Council's curricular review process (see page 15-16).

Course Requirements

Year 1

(Note: Deviations from 1st year coursework requires approval by the Program Chair)

Fall Semester

- NUTR 501 (4) Regulation of Nutrient Metabolism I
- PHSIO 571 (3) Cellular and Integrative Physiology I
- BMB 251 (2) Cell and Molecular Biology (students to audit this class)
- PHSIO 596 (1) two, eight-week rotations or one, sixteen-week rotation
- KINES 590B Noll Seminar Series or equivalent (i.e. MCIBS 590) (1)
- Online SARI Training

Spring Semester (Note: Students must register during October of the previous semester)

- PHSIO 572 (4) Cellular and Integrative Physiology II ((3)
- VBSC 432/BMB 432/MICRB 432 (3) Advanced Immunology
- PHSIO 596 (1) two, eight-week rotations or one, sixteen-week rotation
- NUTR 508 Critical Readings in Molecular Nutrition (1.5)
- KINES 590B Noll Seminar Series or MCIBS 590 (1)
- MCIBS 591 (2) Ethics, Rigor, Reproducibility and Conduct of Research in the Life Sciences

Year 2

(Deviations from 1st year coursework requires approval by the Program Chair)

Fall Semester (Note: Students must register during February of the previous semester)

- STAT 501(3) Regression Methods
- PHSIO 600 (3-5) Thesis Research
- Register for and attend a seminar series (in consultation with the advisor) (1)
- Electives (in consultation with mentor)

Spring Semester (Note: Students must register during October of the previous semester)

- STAT 502 (3) Analysis of Variance and Design or equivalent
- PHSIO 590 (1) Colloquium
- PHSIO 600 (1-6) Thesis Research
- Electives (in consultation with mentor)
- PHSIO 510 (3) Physiological Adaptations to Stress (*strongly recommended but not required)*

Year 3

Fall Semester

- PHSIO 590 (1) Colloquium
- PHSIO 600 (6-8) Thesis Research or PHSIO 601 if post comprehensive exam status
- Attend a seminar series (in consultation with advisor) (1)

Details of these courses are described in Appendix I (pg. 25). Deviations from 1st or 2nd year coursework require permission by the Program Chair, in consultation with the IBMP Steering Committee. Thereafter, students are encouraged to take appropriate elective courses pertaining to their area of interest in consultation with their faculty advisor. Students are responsible for registering for classes in a timely fashion during October or February of the preceding semester starting during the 1st semester. Some courses (particularly Statistics) fill up quickly and it is an unacceptable excuse to postpone completion of core program requirements due to failure to observe registration deadlines. Students can apply for summer funding (STAP) to complete available courses in the summer semester.

Responsible Conduct of Research Training Requirement

All new students in the Integrative and Biomedical Physiology program will be required to complete the online CITI (Collaborative Institutional Training Initiative) Biomedical Science Responsible Conduct of Research (RCR) training course during their first semester. This online course will supplement in-class, discussion-based RCR training provided in MCIBS 591, Ethics, Rigor, Reproducibility and Conduct of Research in the Life Sciences, a 2-credit required course taken during the first year.

First year students should complete the online CITI RCR course during or before the Orientation. To register, go to the Penn State CITI website http://citi.psu.edu/ where you will find instructions. Select your campus, then select Pennsylvania State University Courses and register for the Biomedical Responsible Conduct of Research Course. Students must work on their own to complete the course modules and pass the on-line quizzes. All modules must be completed before 12:00 noon, August 20, 2025, and a copy of the student's Completion Report must be submitted to the Program administrative office (101 LSB or email fqh5144@psu.edu).

Laboratory Rotations

Doctoral students are required to rotate through **at least** three laboratories during their first two semesters before choosing a thesis advisor. Additional rotations in the second summer and/or fall semester are permitted only by approval of the Integrative and Biomedical Physiology Program Chair. Rotations (n=2) for the first semester will be for approximately eight weeks each depending upon the preference of the Principal Investigator of the laboratory. The rotation for the spring semester can be approximately 16 weeks in duration, or n=2, eight week rotations depending on student circumstances and in consultation with the Program Chair. Students will work with the Integrative and Biomedical Physiology Program Chair prior to matriculation (e.g. the summer before you start school) to select laboratory experiences. It is expected that the student spend up to 20 hours per week in the laboratory of the host mentor and function as a regular member of the laboratory team. **Each rotation must be in a different laboratory**. For the first two rotations, students may select laboratories based on research interests and the faculty member's willingness to accept students into their laboratory. The Integrative and Biomedical Physiology Program Chair is available to assist students with this selection. **Prior to the 3rd rotation**, students **must** meet with the Integrative and Biomedical Physiology Program Chair and discuss appropriate options. Each rotation is subject to a formal evaluation by the appropriate laboratory supervisor. Students are required to write a one-page summary of their experience during each rotation, and will also be evaluated by each supervising mentor. The report must be submitted to the Integrative and Biomedical Physiology Program Chair via the Staff Assistant within two weeks after completion of the rotation, at which

time a discussion of the evaluation will occur. Laboratory rotations are part of each student's eligibility to take the qualifying examination. Rotations may or may not be indicated for M.S. students and determined in consultation with the Program Chair.

Communications Competency

The purpose of this requirement is for students to practice and refine their skills in listening to, orally presenting, and writing of technical communications. To meet this requirement, the student should participate in activities such as: making oral or poster presentations at scientific conferences, department seminars, and the annual Integrative and Biomedical Physiology program retreat; participating in journal clubs; conducting formal and informal teaching; and contribute to the writing of scientific manuscripts and research proposals. The student should maintain a continuous record including dates, locations and titles and abstracts that describe the individual activities. Before scheduling the thesis defense, the student's advisor will forward to the Chair of the Integrative and Biomedical Physiology Program the student's self-report of communications activities with a memo of approval signed by the advisor.

Analytical Competency

The intent of this requirement is for students to learn quantitative techniques for designing experiments and for analyzing data. At a time shortly after the qualifying exam has been successfully passed, the student and advisor in consultation with the student's Dissertation Committee will submit a plan for attaining analytical competency to the Chair of the Integrative and Biomedical Physiology Program. Typically, this plan will include formal coursework in statistics (STAT 501/502 required for PhD students) or bioinformatics.

Qualifying Examination

Objectives of the qualifying exam:

- To fulfill the Fox Graduate School's requirements for admission into a Ph.D. program.
- To assess a student's overall knowledge and understanding of general physiological principles and first year concepts.
- To determine the student's ability to synthesize and integrate physiological facts and concepts and express these in writing and orally.
- To evaluate the student's strengths and weaknesses relative to specific areas of physiology.
- To serve as the mechanism for screening and selection of students for admission into the Integrative and Biomedical Physiology Ph.D. program.
- To assess English Competence in writing and speaking, as required by the Fox Graduate School.

When will the exam be given and who should take it?

- According to the Fox Graduate School requirements, the qualifying exam may be given after at least 18 credits have been earned in graduate courses beyond the baccalaureate and within 3 semesters of program entry. The examination should be taken within three semesters (summer sessions do not count) of entry into the doctoral program. **Integrative and Biomedical Physiology IGDP students should be prepared to take the qualifying exam ~ during the 3rd and 4th weeks in May 2025.**

- The Qualifying Examination Scheduling Form (page 13) must be completed by the Qualifying Exam Committee Chair and sent to the Integrative and Biomedical Physiology Program Chair and Huck Program Assistant (Tasha Marasco, tme119@psu.edu) at least one week before the exam date.

- A student transferring from another graduate school with 30 or more transfer credits must take the qualifying examination prior to earning more than 25 credits at Penn State.

Nature of the exam and who will prepare

- In accordance with the Fox Graduate School requirements, the examination will be administered by Graduate Faculty members in the Integrative and Biomedical Physiology Program. The Chair of the Qualifying Examining Committee, in consultation with the Physiology Program Chair, will appoint additional members of the Qualifying Exam Committee to ensure adequate breadth of coverage of physiology. The Qualifying Examining Committee will be a standing committee that consists of at least 3 but not more than 6 Integrative and Biomedical Physiology faculty members. Many faculty contribute questions, mostly those who taught respective sections in PHSIO 571/572, but all first-year course instructors will be solicited for questions. All students will be given the same written examination on the same days. Prior to the oral exam, a conference will be held so that members of the oral examining committee are aware of strengths and weaknesses identified by the "graders". The "graders" are, in most cases, the same faculty who provided the questions. Members of "oral examining committee" may also submit and grade questions.

- The Chair of the Qualifying Examining Committee will choose 2 to 3 questions from each of 8 areas of physiology from a pool of already created questions which fulfill the above-stated qualifying objectives. The physiology faculty at large will be asked to help develop, and periodically update, the pool of qualifying questions.

- Each student will be required to answer 4 to 8 questions on the first day, and 4 to 8 questions on the second day for a total of 8 to 16 questions over 2 days.

- The questions to be answered on each day will each represent a different testing area and will be chosen by the student from a pool of 2 to 3 questions per testing area. The total allotted time is four hours each day, and the exam will be closed book. Students may use a laptop computer that is provided to them to type their answers.

- After at least 1 week, but not more than 2 weeks (1 week is recommended), a 2-hour oral exam will be given by members of the examining committee. This exam will function to explore areas of weakness noted on the written exam and to assess the student's abilities in the area of oral expression. The oral exam will serve as the basis for evaluating the candidate's proficiency in listening and speaking. Questions in the oral exam may also focus on aspects of the previously completed written answers if they require more explanation, or on other topics covered in the academic year.

- Students are required to perform satisfactorily on all portions of the exam. This format allows students to demonstrate rapid integration of acquired knowledge and also tests the ability to think about a problem over a longer interval. The final decision (Pass, Pass with deficiencies, Fail with right to reapply, Fail) on the outcome of the entire exam will be made immediately following the oral component, and communicated to the student.

- Students are encouraged to schedule a practice session with faculty members in order to develop oral organization and presentation skills. This should be arranged for the whole student group.

- English competency will be assessed by the qualifying committee based on the student's oral and written responses to the exam questions.

Grading of the Exam

- Each faculty member of the Examining Committee will be assigned written questions to grade based on their area of expertise. Integrative and Biomedical Physiology faculty members outside the examining committee may be consulted to assist with grading of questions if necessary. The Chair of the Examining Committee, in consultation with the other committee members, will determine an overall grade of Pass or Fail for the written exam. Regardless of the grade on the written exam, students will take the oral exam. The Examining Committee will assess the student's performance on the oral exam, and, considering the results of both exams, recommend or not recommend to the Integrative and Biomedical Physiology Program Chair that the student be admitted to the Ph.D. program in Integrative and Biomedical Physiology. Students will be afforded an opportunity to review their written answers prior to the oral examination but not allowed to written copies of their answers.

- The results of the exam will be communicated by the Chair of the Qualifying Exam Committee to the student, the Integrative and Biomedical Physiology Program Chair and the Program Assistant within one week of completing the oral exam. These results will consist of whether the student has passed or failed the exam and a general evaluation of the student's performance (see form page 14). This evaluation will indicate general strengths and weaknesses in Physiology subject matter. It will also indicate proficiency in English writing and speaking. Recommendations on how areas of weakness should be remediated will be included. NOTE: results usually provided on the day of the oral exam, by the oral examining committee.

- The report of Pass or Fail to the Fox Graduate School will be determined by the Qualifying Examining Committee, and communicated to the Physiology Program Chair. This decision will be based on three major factors: qualifying exam performances; graduate scholarship, and laboratory rotations' evaluations. In the event of marginal student performance, it is possible to have a Fail decision with a repeat of the examination (right to reapply). In the case of a fail decision without right to reapply, the committee may decide that an M.S. degree (research thesis) may or may not be appropriate.

- The student must complete any technical or English language remediations prescribed by the Qualifying Examining Committee within the time frame specified by the examining committee, and it is the candidate's responsibility to initiate remediation activities as specified by the qualifying exam committee. A memo certifying that the remediations have been fulfilled must be sent from the student's advisor to the Integrative and Biomedical Physiology Program Chair. Failure to remediate deficiencies within the specified time frame will result in termination from the program, in accordance with the Fox Graduate School Policies (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-800/gcac-803-procedures-termination-unsatisfactory-scholarship/).

Intercollege Graduate Degree Program in Integrative and Biomedical Physiology
Doctoral Qualifying Examination Scheduling Form

Name of Candidate: _____

PSU Student ID #: _____

Proposed Date, Time and Location: _____

Examining Committee: (Type names)

Members: _____

_____ _____

_____ _____

Has the student fulfilled the Fox Graduate School's communications requirement?

Has the student provided official confirmation of baccalaureate degree?

Is the student registered as a full-time or part-time student for the semester in which the qualifying examination is taken (excluding summer)?

The objective of this exam is to assess a student's overall knowledge and understanding of general physiological principles. The student should be tested in at least eight areas, such as those suggested below. Please indicate which committee member is responsible for each area to be tested.

Related Areas	**Committee Member**	
Cardiorespiratory and Vascular Physiology		**(2 of 3)**
Cellular and Molecular Biology		**(1 of 2)**
Endocrine System, Metabolism and Immunology		**(2 of 3)**
Gastrointestinal System		**(1 of 2)**
Neurophysiology and Membrane Biophysics		**(2 of 3)**
Renal System		**(1 of 2)**
Reproductive Biology		**(1 of 2)**
Muscle/Bone		**(2 of 3)**
ALL STUDENTS:		
English Competence – speaking	**ALL**	**----------**
English Competence – writing	**ALL**	**----------**

Approved by: Qualifying Exam Committee Chair _____
(signature)

RETURN COMPLETED FORM TO Tasha Marasco (tme119@psu.edu) in 101 LIFE SCIENCES FOR

APPROVAL AT LEAST 2 WEEKS PRIOR TO EXAM.

Intercollege Graduate Degree Program in Integrative and Biomedical Physiology

Doctoral Qualifying Examination Results

Name of Candidate: _____ PSU Student ID #: _____

Date, Time and Location: _____

Examining Committee: Members:	(Names)	(Signatures)
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

Related Areas	Adequate	Deficient
Cardiorespiratory and vascular physiology		
Cellular and Molecular Biology		
Endocrine/ Metabolism/Immunology		
Gastrointestinal System		
Neurophysiology and membrane biophysics		
Renal System		
Reproductive Biology		
Musculoskeletal System		
English Competence – speaking		
English Competence – writing		

Candidate Passes:
____ Accept as a Candidate
____ Accept with Deficiencies

Candidate Fails:
____ Withdraw from the program
____ Right to Reapply

Plan to remediate technical deficiencies or deficiencies in English Competence if necessary (use back if necessary; must include time frame for remediation and consequences for remediation failure):

Qualifying Exam Committee Chair

_____
(signature)

Integrative and Biomedical Physiology Program Chair

_____
(signature)

RETURN COMPLETED FORM TO Tasha Marasco (tme119@psu.edu) Within 1 Week of Exam Completion

Advisors and Dissertation Committees

After the student has successfully completed the qualifying exam and is admitted to the doctoral program, the student needs to inform the Physiology Program Chair and HUCK program staff of advisor selection. This decision will be influenced by the outcome of the laboratory rotations, as outlined above. **Arrangements for, and approval of, term-by-term details of the student schedule through the remainder of the graduate program is now the function of the advisor.**

After admission to candidacy, the general guidance of a doctoral candidate is the responsibility of the Dissertation Committee, which consists of four or more members of the Graduate Faculty. The committee must include at least two senior members of the Graduate Faculty and at least one member from outside the Integrative and Biomedical Physiology Program. In accordance with Fox Graduate School Policy, http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-602-phd-committee-formation/, a student's Ph.D. Committee should be formed as soon as possible after the student has secured an adviser, but in no event later than one calendar year following the date of successful completion of the Qualifying Examination unless an alternative timing is approved through the Graduate Council's curricular review process. The Dean of the Fox Graduate School, upon the recommendation of the advisor and the Chair of the Integrative and Biomedical Physiology Program, will appoint the Dissertation Committee. The Integrative and Biomedical Physiology Program Assistant, Tasha Marasco (tme119@psu.edu), should be informed of the student's faculty committee composition at this time and will submit and gain necessary approvals from the Fox Graduate School.

The Dissertation Committee is responsible for establishing the broad outline of the student's program and should review the program as soon as possible after admission to candidacy. The student and his/her advisor should schedule this review. The Committee will prepare, administer, and evaluate the examinations of the candidate and supervise and approve the dissertation.

Dissertation committee composition will be in accordance with GCAC-602 of the Graduate Degree Programs Bulletin: (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-602-phd-committee-formation/):

- 4 person minimum of approved PSU Graduate Faculty.
- 2 members must be inside the major and at least 1 member must be outside the major and serve as the "Outside Field Member." Note - the outside member must be a member of the approved PSU Graduate Faculty. The outside member for intercollege graduate programs may be inside the major but represent another department. Specifically, the primary appointment of at least one regular member of the dissertation committee must be in an administrative unit that is outside the unit in which the dissertation/performance adviser's primary appointment is held (i.e., the individual's tenure home). This committee member is referred to as the "Outside Unit Member." In some cases, an individual may have a primary appointment outside the administrative home of the student's dissertation adviser and also represent a field outside the student's major field of study; in such cases, the same individual may serve as both the Outside Field Member and the Outside Unit Member.
- A person not affiliated with PSU may be added as a "Special Member" (beyond the 4 members of the approved PSU Graduate Faculty) upon recommendation of the Chair of the Program and approval of the Graduate Dean. A memo plus the individual's C.V. must be drafted with approval signature spaces for the Integrative and Biomedical Physiology Program Chair plus Ms. Lori Anne Hawn (Director, Graduate Enrollment). Please contact the Staff Assistant to assist with this paperwork. A Special Member is expected to participate fully in the functions of the dissertation committee. If the Special Member is asked only to read and approve the doctoral dissertation or to evaluate the final performance, that person is designated a Special Signatory.

- The committee chair must be a member of the approved PSU Graduate Faculty. Typically, it's your faculty advisor.
- Committee attendance: Partial remote participation (The student, adviser, and Ph.D. Committee Chair/Co-Chairs must be physically present for the examination. Other members of the Ph.D. committee may participate remotely with the agreement of the student and adviser.)
- Need approval of 2/3 of the committee members for passing comprehensive exam and defense dissertation.
- **Comprehensive exam and defense paperwork must be submitted 3 weeks prior to your scheduled meetings. Please contact Program Assistant Tasha Marasco (tme119@psu.edu) for assistance with submitting required forms to the Fox Graduate School.**

Dissertation Proposal and Six-Month Reviews

- It is the responsibility of the student to outline to the Dissertation Committee the means by which the dissertation requirement is to be satisfied. The dissertation should examine a hypothesis or test several theories with a unifying theme. The aims of your research will be developed with the guidance of your advisor. The student, after providing background to the problem, the specific aims of the proposed research, and a brief description of available preliminary data, will then write a dissertation proposal. The student should present this proposal orally at the first meeting of the Committee. The proposal serves as an amendable agreement between the student and the Committee and gives a clear goal for finishing the dissertation. As the student and his/her advisor cannot predict the future with certainty, this document should be considered as a starting point only. The dissertation research or new findings in the field may lead down unexpected paths. The student should amend the dissertation proposal as necessary and always seek the approval of the Committee for such diversions.

- **The student is required to meet formally with the Dissertation Committee to review the research progress, problems, and obstacles at least once per year starting during the second year.** Scheduling the meetings is the responsibility of the student in consultation with the faculty advisor, as is informing the Huck Program Office of the exact date and time of the meetings. A progress form (see page 17) must be filled out and signed by all committee members as documentation of successful progress in the program. Failure to meet formally with the Dissertation Committee as noted will be interpreted as insufficient progress toward degree with associated consequences (see http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-800/gcac-801-conduct/, http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-800/gcac-803-procedures-termination-unsatisfactory-scholarship/, http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-800/gcac-804-termination-assistantships-inadequate-performance/).

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Graduate Student Dissertation Committee Meeting Record

Students in the Intercollege Graduate Degree Program in Integrative and Biomedical Physiology are required to have 1 to 2 meetings per year with their Ph.D. advisory committee.

_____, had a committee meeting on _____.
Student Name Date

_____
Signature

Satisfactory Progress Yes or No

_____	_____	_____
Thesis Advisor	Signature	
_____	_____	_____
Committee Member	Signature	
_____	_____	_____
Committee Member	Signature	
_____	_____	_____
Committee Member	Signature	
_____	_____	_____
Committee Member	Signature	

Committee Disposition: _____ Sufficient Progress _____ Insufficient Progress

Committee's Perception of Candidate Progress (please provide a specific **plan for remediation** if needed and **associated consequences** if sufficient progress is not made; continue on back if necessary):

Mentor - Please return to Tasha Marasco (tme119@psu.edu) within 1 Week of Meeting Completion

Comprehensive Examination

Purpose of the Comprehensive Examination
The purpose of the Integrative and Biomedical Physiology Program Comprehensive Exam is to assess student preparedness to proceed to the dedicated research phase of their doctoral degree training process. The comprehensive examination will evaluate the student's mastery of the major field and, if appropriate, dual-title and minor fields, and to determine whether the student is prepared to succeed in their dissertation research. The responsibility for scheduling the Comprehensive Exam rests with the student and their Ph.D. committee chair. The ability of the student to identify important areas of research, synthesize a hypothesis from contemporary literature, and develop a practical experimental plan are all key elements in this examination. Essentially, the exam addresses the ability of the student to progress from theoretical answers provided in response to course exam questions and advance to identifying important questions on their own and developing a realistic plan to answer these questions. As such, this exam represents an important opportunity for the dissertation committee to identify those students capable of obtaining a doctoral degree and separating them from those students that are not prepared to proceed with their doctoral research. Paperwork for the Comprehensive Examination must be completed and submitted to the Integrative and Biomedical Physiology staff assistant at least three weeks prior to the proposed test date. **Typically, this exam should be completed during the 3rd year.**

Written Comprehensive Exam

Written Comprehensive Exam Format: The format of the comprehensive exam will be determined by the student's primary advisory **and** the dissertation committee and will follow policies set forth by the Fox Graduate School (GCAC-606,https://www.gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-606-comprehensive-examination-research-doctorate/?mobileFormat=false**)**. For example, the comprehensive exam may be the development of an experimental plan (grant proposal) that could be reasonably expected to refute or provide substantive support for the proposed hypothesis. Alternatively, the format for the comprehensive exam may consist of a series of in-depth questions related to the candidate's primary area of interest and based on classic and current literature. The questions will be written by the dissertation committee members, and the written exam will be administered over a two-day period, with the student writing for 6 to 8 hours per day. The written exam will be followed approximately one week later by an oral exam by the doctoral dissertation committee.

Suggested format for the grant proposal exam is an NIH R21 proposal (following NIH directions for component parts) with 1-page specific aims, 1-page background, 2-page preliminary evidence, which should include the most relevant data derived from the literature that directly supports the hypothesis, and 3-4 pages for the experimental plan. The experimental plan should provide enough detail regarding methods to demonstrate to the committee that the student understands the principles of the experimental techniques. Specific details of techniques should be avoided in the comprehensive written application; however, the student should be prepared to answer detailed questions regarding the principles of any technique proposed in the exam, including statistical analysis. The proposal should not be more than 10 pages, single-spaced (or no more than 15 characters per linear inch) in 11-point Arial font. Margins will be no smaller than 0.5 inches. Additional figures that support or help clarify the proposal may be provided in an appendix and are not counted in the 10-page exam limit. Further, the document will be referenced, and the references are also not counted in the 10-page limit.

Topic: The exam will be the development of an experimental plan for a testable hypothesis i.e. a NIH-style grant application. The candidate should be able to defend the proposal in the time and space provided. Therefore, the student may wish to model their exam on a specific aim from a NIH R21 application. **The exam topic may be peripherally related to the thesis research for the student, but not a duplication of the mentor's grant in any way, or any other previously submitted application where feedback has been**

provided to the candidate. Meritorious applications that are related to thesis research should be considered for submission to a granting agency for external funding consideration. The student may also choose a topic separate from his/her thesis research if agreed upon by both the advisor and the committee. **Hypotheses cannot be prescribed by the mentor or from any of the mentor's current research grants, or the committee. If the candidate has already written a grant application and received feedback, a possible approach would be to independently write an additional aim for the existing grant with additional approaches to model an NIH RO1 application, which would substantially alter the nature of the proposal.**

All students will provide a *letter of intent* for the comprehensive topic to the Dissertation Committee for comments and approval. The letter of intent will be no longer than one page and provide a background and rationale, a clear hypothesis, and the specific aims for the proposal, 8 weeks prior to the exam date.

Oral Comprehensive Exam

For the grant proposal mechanism, the student should prepare a ~40 min oral presentation including background and rationale, supportive data and figures to clarify the proposal and the experimental plan. The student can expect to be questioned during and after the presentation. For the class/current literature oral exam, the student can expect 1 to 2 hours of questioning by the doctoral dissertation committee.

Timeline

Penn State policy **(**https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-606-comp-exam-temp/**)** states that the comprehensive exam should be scheduled within one year of completion of all required course work, but it must be scheduled no later than five years following the passing of the Qualifying Examination. Students are encouraged to complete the exam during the 3rd year, and tuition assistance may be affected if students have failed to complete the comprehensive examination prior to the 4th year without extenuating circumstances. After acceptance of the letter of intent the student will have up to 8 weeks to prepare for the comprehensive exam. The student must submit the written exam to all committee members 1 week before the exam date or 7 weeks from acceptance of the letter of intent. All necessary forms required by the Fox Graduate School must be completed at least three weeks in advance of the exam (please see Tasha Marasco (tme119@psu.edu) for assistance with the paperwork).

Grading

The student may receive a pass or fail for the comprehensive exam. If the student receives a pass the student will be graded as either below average, average, above average or exceptional. If the student fails, the Dissertation Committee may decide to allow the student a second opportunity to take the exam or may decide the student must leave the Integrative and Biomedical Physiology Graduate Program in accordance with Penn State policy. The student will be afforded two opportunities to pass the exam. Should the student fail the exam, the dissertation committee may offer the opportunity to finish the program with an M.S. Degree in Integrative and Biomedical Physiology. Grant proposals will be graded using an NIH rating scale. A favorable vote of at least two-thirds of the members of the Ph.D. committee is required for passing the Comprehensive Examination. Upon successful completion, the student should be continually enrolled in PHSIO 601.

Committee Oversight

The dissertation adviser, as well as the chair of the Ph.D. Committee (if not the same individual as the dissertation adviser), along with additional members of the Ph.D. Committee to total a minimum of three, must be physically present at the Comprehensive Examination. Requests for participation of any Ph.D. committee member via distance must accompany the Examination Request Form at least two weeks prior to the date of the examination. (In the case of emergencies, programs should contact Graduate Enrollment Services.)

Dual Title Students

If the student is also enrolled in the CTS dual-title graduate degree program, the comprehensive examination requirements of the dual-title program must be integrated into the comprehensive examination. The dual-title faculty representative on the Ph.D. committee will work closely with the mentor in constructing comprehensive examination questions and assessing student performance related to the dual-title area of study as part of a unified comprehensive examination with the major program administered to the student.

Final Oral Examination / Dissertation Defense

A final oral examination will be given in defense of the dissertation. A meeting of all Dissertation Committee members must be held within 6 months of the defense at which time it will be determined if the student has completed all requirements and may proceed. The final examination must be held at least 3 months after passing the comprehensive and at least 7 weeks before the commencement in which the student wishes to participate. Details of this requirement are provided in the Fox Graduate School Policy (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-608-final-oral-examination-research-doctorate). The program staff will work with the Integrative and Biomedical Physiology Graduate Program Chair to schedule the examination and give at least four weeks' notice. No examination will be scheduled until a complete "final draft" of the dissertation has been received by all committee members and by the Integrative and Biomedical Physiology Program Chair. It is required that the final draft be *thoroughly reviewed by the student's advisor* prior to distribution to the committee members and that all copies must be given to committee members *no less than 14 days* before the scheduled defense.

When a period of more than six years has elapsed between the passing of the Comprehensive Examination and the completion of the program, the student is required to pass a second Comprehensive Examination before the final oral examination or final performance will be scheduled.

The final oral examination is open to the public and, although largely related to the dissertation, may cover the whole of the candidate's program. A favorable vote of at least two-thirds of the committee is required for passing. If failure is determined, the committee is responsible to decide whether a second examination may be taken. Dissertation defense paperwork must be completed and submitted to the Integrative and Biomedical Physiology staff assistant at least three weeks prior to the proposed test date. The public portion of the defense must be advertised to all relevant listservs and an abstract provided. It is the responsibility of the student and mentor to provide this information to the HUCK program assistant (fqh5144@psu.edu) at least 1 week in advance of the defense for distribution to relevant HUCK and departmental listservs.

Expectation: It is expected that each student will have a minimum of three first-authored manuscripts (based on his/her research) that have been either accepted and/or published in a peer reviewed journal.

Additional Requirements for the Ph.D.

Residence. There is no minimum number of credits or semesters of study required for the Ph.D., but during a 12-month interval between admission to candidacy and completion of the program, the candidate must spend at least two semesters registered as a full-time student. This will usually be achieved over the course of the "normal" second year of study in the Integrative and Biomedical Physiology Program. "Full time" is defined as registration for at least 9 credits for those supported by a fellowship or traineeship. During the second year, these credit requirements may be met only in part by course work. The balance of the required credit load should be taken as PHSIO 600, Thesis Research (on campus). The number of PHSIO 600 credits should accurately reflect the effort of the students in thesis research. Work under PHSIO 600 can be given the deferred grade of "R", but only 12 credits of "R" can be converted to a conventional grade in a given Ph.D. program.

Continuous Registration. After the two-semester residency requirement (above) is met, status as a student must be maintained by continuous registration until the dissertation is accepted. The details of this requirement are given at http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-500/gcac-515-registration-course-work-completed/. During this interval, the full-time student should register for PHSIO 601, Dissertation Preparation, which involves no credits and is graded "R" (research). PHSIO 601 cannot be used until the semester after the comprehensive exam is passed. "R" grades from PHSIO 601 cannot be converted to conventional grades.

It is important that students use the PHSIO 601 registration after the comprehensive requirement is filled, as it involves a substantial reduction in tuition. If courses are taken during this interval (> 3 credits per semester), an additional tuition fee must be paid. Normally, students should complete their course work and comprehensive exam as soon as possible; efforts should be devoted entirely to thesis research and writing after this time.

Thesis. The Ph.D. dissertation must be prepared in accordance with strict and specified guidelines, as detailed in the **Thesis/Dissertation Guide** (https://gradschool.psu.edu/academics/theses-and-dissertations/submission-procedure). Students are advised to work closely with that office and the **Thesis/Dissertation Guide** in preparation of their dissertation. A **format check** will be required by the Fox Graduate School and it is the student's responsibility to meet all imposed deadlines.

Examination Schedule

The above schedule outlines the time course over which the various examinations required in the Integrative and Biomedical Physiology Program must be completed. The timetable is based on the academic year, September to August. The faculty, Dissertation Committee and student will participate in the scheduling of these examinations. Beyond the qualifying examination, however, it is the ultimate responsibility of each student to be certain that progression of the program and completion of the appropriate examinations are accomplished in a timely fashion. Examinations should be scheduled as outlined in these guidelines, based on the assumption that the entire Graduate Program will require four years of effort.

The Chair of the Dissertation Committee, the Chair of the Graduate Program and the Program Coordinator will aid the student in scheduling and arranging the required examinations. Permission to postpone any of the examinations beyond the interval indicated must be obtained in advance by the individual student by arrangement with the Chair of the Dissertation Committee and the Program Chair.

Important Notice: After completing or prior to scheduling any of the above requirements it is essential that you contact the HUCK program assistant (Tasha Marasco, tme119@psu.edu). Most of the milestones in your progress require formal notification and/or scheduling through the Graduate Office. Please inform the office of your progress and intentions at least three weeks in advance.

Integrative and Biomedical Physiology Graduate Program

Master's Degree Requirements

During the first year, students will identify a faculty advisor with whom a project will be done. The first year is structured much like the Ph.D. program, with similar course requirements, depending on individual background and future goals. The second year can be modified to accommodate the goals of the student. All masters students must have a minimum of 30 credits at the 400 – 600 levels, a "B" earned in all physiology course taken, and a 3.0 overall GPA. A final thesis defense is not required by the Fox Graduate School but strongly encouraged. A public oral presentation of the final research project is required by the program. The public portion of the defense must be advertised to all relevant listservs. It is the responsibility of the student and mentor to provide this information to the HUCK program assistant (Tasha Marasco; tme119@psu.edu) at least 1 week in advance of the defense for distribution.

The master's thesis option requires a minimum of the following:

- 1 credit of Colloquium (PHSIO 590)
- 2 credit of Ethics (MCIBS 591 or equivalent)
- 14 credits in the major at the 400 – 500 levels (which must include PHSIO 571/572/590)
- 18 credits at the 500 – 600 levels (excluding PHSIO 600 and must include a STAT course, typically STAT 500)
- 6 credits PHSIO 600 (6 credits is the limit that can receive a A-F grade)
- RECR training

Upon consultation with the faculty advisor, the student selects a thesis committee comprised of three approval graduate faculty members, writes a thesis based on original research, defends his/her work, and provides a public seminar on his/her work.

A non-thesis master's option is only by approval of the Program Chair and under extreme circumstances such as medical illness. The following is the minimum required:

- 2 credit of Ethics (MCIBS 591 or equivalent)
- 18 credits in the major at the 500 level
- 6 credits of PHSIO 596

Students must have either a first authored manuscript (based on his/her research) that has been either accepted and/or published in a peer reviewed journal or a thorough but focused review of the literature in a contemporary area of literature in leading to a written paper. Either item is to be approved by the student's faculty advisor, given to the Integrative and Biomedical Physiology Program Chair for evaluation and final approval.

Please note - PHSIO 596 (Independent Study/Rotations), and BIOL598A (Teaching) credits all count toward the 30 credits. If all course credits and requirements are met, M.S. students do not have to be registered for classes while writing and/or defending his/her work.

Additional requirements for each option are contained in this booklet. Students must present their thesis in accordance with the Penn State University guidelines as described in the THESIS GUIDE Requirements for the Preparation of Master's and Doctoral Dissertation https://gradschool.psu.edu/academics/theses-and-dissertations/submission-procedure.

Integrative and Biomedical Physiology Graduate Program

IUG Requirements and/or Honors Options

The Integrated Undergraduate/Graduate (IUG) program in the Schreyer Honors College (SHC) is designed exclusively for Schreyer Scholars who have exceptional academic records; whose progress in the major is so advanced that they would be taking graduate courses in later semesters even without IUG status; whose general education progress and plans indicate a readiness to forge ahead with specialization; and who are ready for the particular challenge of graduate work, research and advancing knowledge. Schreyer Scholars who believe they fit this profile are encouraged to apply to be IUG Scholars. Schreyer Honors Scholars can also complete honors research in physiology, so long as the research is completed under the direction of an Integrative and Biomedical Physiology IGDP faculty member.

Application:
The application process for IUG must begin during the 4th, 5th or 6th semester of study. (Students who are not in the Schreyer Honors College cannot apply for graduate studies through this IUG program. Instead, those students should contact the Associate Dean in the College of their major or desired graduate program to determine if there is an IUG program in effect in the college.)
Use the following link to learn more about the IUG Program and IUG Guidelines
https://www.shc.psu.edu/academics/opportunities/
Required courses include: PHSIO 571, PHSIO 572, PHSIO 590, STAT 500.

Questions regarding the Integrative and Biomedical Physiology IUG:

Gregory C. Shearer, Ph.D.
Chair, Intercollege Program in Integrative and Biomedical Physiology
110 Chandlee Laboratory
814-867-3040
gcs13@psu.edu

Questions regarding Honors in Integrative and Biomedical Physiology should be directed to:

James A. Pawelczyk, Ph.D.
Honors, Advisor
107 Noll Laboratory
jap18@psu.edu

Integrative and Biomedical Physiology Graduate Program

Minor Requirements

The minor in Integrative and Biomedical Physiology augments the training of doctoral students with a coordinated group of courses that provide an integrated perspective of physiology from the molecular to the organismal level. The Fox Graduate School regulations dictate that "a minor consists of no fewer than 15 credits of integrated or articulated work in one field related to, but different from, that of the major." It is expected that most students pursuing the minor will be graduate degree candidates in basic biological sciences, health sciences, or bioengineering.

This minor requires the following coursework:

- BIOL 472. If the student took a one-semester, upper-level undergraduate mammalian physiology course as an undergraduate, then this requirement may be waived with approval by the Chair of the Integrative and Biomedical Physiology Graduate Program.
- PHSIO 571/572. If these courses are required for the major, then substitute an equal number of credits in 500-level Physiology elective courses.
- A 3-credit, 500-level Physiology elective course.
- Additional credits from 500-level Physiology courses or a relevant 400- or 500-level course so that the total course credits for the minor is 15. These 15 credits cannot include course work that is used to fulfill requirements in the student's major. Elective courses for the minor must be approved by the Chair of the Integrative and Biomedical Physiology Graduate Program.

Students must earn a grade of C or better in each course in the minor and maintain an overall average of 3.00 in the minor. One member of the student's major dissertation committee must be a faculty member in the Intercollege Graduate Degree Program in Integrative and Biomedical Physiology. Per the Fox Graduate School, this minor must have the approval of the departments or committees responsible for both the major program and the Integrative and Biomedical Physiology Graduate Program Chair.

Dual-Title Doctoral Degree Program in Clinical and Translational Sciences (CTS)

Students may obtain a dual-title Ph.D. in Integrative and Biomedical Physiology and Clinical and Translational Sciences (CTS). The purpose of the dual title degree is to provide a cohesive curriculum for in-depth training that combines training in disease mechanisms with clinical applications whose goal is improving human health. Value added training for graduates who seek to contribute in clinical research environments, such as the domain of personalized medicine, clinical trials, and contract research organizations would benefit from this program. A particular emphasis is also placed on navigating the policy environment associated with clinical research. Students will complete a qualifying exam in both Physiology (May 2025) and Clinical and Translational Sciences (up to one semester thereafter). Students must declare to the Physiology Program Chair dual-title interest during fall of the 1st semester and may substitute CTS 590 colloquium for Noll Seminar (KINES 590B) during the spring semester of their 1st year. The program chairs and potential mentors must approve participation in the CTS dual degree program. Students should contact the Integrative and Biomedical Physiology Chair no later than December 2024 to declare interest in pursuing the dual-title in CTS.

A. General Requirements in the Dual-Title Ph.D. program in Clinical and Translational Sciences

The dual-title Ph.D. degree in Clinical Translational Sciences (CTS) requires 26 credits distributed as follows:

- CTS 590 colloquium, two semesters (2 credits)
- A total of 18 credits of elective coursework distributed across the following domains
  - °Statistics (3 credits)
  - °Epidemiology (3 credits)
  - °Bioinformatics (3 credits)
  - °Experimental design and interpretation (3 credits)
  - °The regulatory environment (3 credits)
  - °Scientific Communication (3 credits)
- CTS 595 Internship (6 credits) in research, clinical, industry or government settings, as appropriate. If desired, variable credit may be assigned to facilitate multiple internships.

Students may also request to have specific courses counted toward both their PHSIO degree and the dual-title, with the permission of each Program Head (maximum of 12 credits).

B. Course Work Requirements, Dual-Title Ph.D. in Integrative and Biomedical Physiology and Clinical & Translational Sciences

Table 1 provides an example of course work for students who elect to participate in the prop
osed Integrative and Biomedical Physiology-CTS dual-title Ph.D.

Table 1. Example progression to PHSIO-CTS dual-title Ph.D.

Course	Credits	PHSIO	CTS
Academic Year 1 Fall (Semester 1)			
NUTR 501: Regulation of Nutrient	4	Req'd	
PHSIO 571: Cellular and Integrative	3	Req'd	
BMB 251: Cell and Molecular Biology (students audit this class)	2	Req'd	
PHSIO 596: Two, eight-week rotations	1	Req'd	
KINES 590B: Noll Seminar Series or	1	Req'd	
Academic Year 1 Spring (Semester 2)			
PHSIO 572: Cellular and Integrative	3	Req'd	

VBSC 432/BMB 432/MICRB 432: Advanced Immunology	3	Req'd	
STAT 501: Regression Methods	3	Req'd	Statistics
MCIBS 591: Ethics, Rigor, Reproducibility and Conduct of Research in the Life Sciences	1	Req'd	Regulatory Env.
CTS 590: CTS colloquium	1	Req'd	Req'd
Academic Year 1 Summer			
STAT 501: Regression Methods	3	Req'd	Statistics
Annual milestones: Complete SARI training, qualifying exam, identify research mentor			
Academic Year 2 Fall (Semester 3)			
STAT 502: Analysis of Variance and Design of Experiments	3	Req'd	
BMB 484: Functional Genomics	3	Elective	Bioinformatics
STAT 509: Design and Analysis of Clinical	3	Elective	Exp. Design
CTS 590: CTS Colloquium	1	Req'd	Req'd
Academic Year 2 Spring (Semester 4)			
STAT 507: Epidemiological Research Methods	3		Epidemiology
BIOET 504: Research Integrity in Science and Engineering	2		Regulatory Env.
PHSIO 600: Thesis Research	3		
KINES 590B: Noll Seminar Series or equivalent	1	Req'd	
Academic Year 2 Summer			
CTS 595: Internship	6		Req'd
Annual Milestones: IDP update, Dissertation Committee, Complete seminar requirements, CTS internship			
Academic Year 3 Fall (Semester 5)			
AEE 597: : Grant writing	3		Comm.
PHSIO 600: Thesis Research	3		
PHSIO 510 Physiological Adaptations to	3		
KINES 590B: Noll Seminar Series or	1	Req'd	
PHSIO 590: Colloquium	1	Req'd	
Academic Year 3 Spring (Semester 6)			
PHSIO 600: Thesis Research	6		
PHSIO 590: Colloquium	1	Req'd	
Annual milestones: Comprehensive Exam, Dissertation Committee Meetings, IDP update			
Year 4			
PHSIO 600: Thesis Research	var		
Annual milestones: Dissertation Committee Meetings, IDP update			
Year 5			
PHSIO 600: Thesis Research	var		
Annual milestones: Dissertation Committee Meetings, IDP update, Dissertation defense			

Total credits required by program (does not include double counting)		34	26
Credits that are double counted by program		11	11 (12 max)
Total course credits completed by student (not including dissertation research credits)		49	

- Req'd = course is required for either IBMP or CTS
- Elective = course fulfills general elective category toward PHSIO requirements
- Others = specific elective domain that course fulfills toward CTS requirements

C. Other Requirements, Dual-Title Ph.D. IBMP and Clinical & Translational Sciences

Students must be conducting original research in basic and/or clinical focused on mechanisms of disease, detection, diagnosis, and/or treatment with a penultimate objective to enhance human health. This research will form the basis for the dissertation and all expectations associated with the PHSIO doctoral degree are applicable. The program is organized to facilitate co-mentoring by clinical and/or translational scientists during dissertation research.

Topics Students and Dissertation Advisors Should be Prepared to Discuss *Before* a Student is Accepted to a Laboratory

The Graduate Faculty at Penn State recognize the unique aspects of the relationship between students engaged in research as part of their graduate degree program, and their dissertation advisor. In the best examples of this mutually beneficial relationship, both the faculty member and the student stand to gain much. The student learns both discipline-specific knowledge, and, more importantly, the skills to employ that knowledge in whatever pursuit the student eventually undertakes. With time, the faculty member gains a colleague who participates in not just in the technical aspects of the faculty member's research, but also contributes to the intellectual development of the research project.

To ensure that students know what is expected of them as they embark on this new and unique phase of their education, we provide this guiding document. This document is to be used to frame discussions between a new graduate student and a faculty member the student is considering for a dissertation advisor. Certainly, other related topics can and should be part of this important conversation. Faculty have unique perspectives and opinions about many of these topics, and thus it is important for a student to be sure he/she understands what the expectations will be upon joining the laboratory.

EXPECTATIONS OF GRADUATE STUDENTS WITHIN A LABORATORY

- PROFESSIONALISM
  - Honesty
  - Communication
  - Behavior
- WORK ETHIC
  - Attitude
  - Time in Lab
  - Time outside Lab
- LABORATORY MANNERS
- SELF MOTIVATION
- FUNDING
- EXPECTATIONS OF DISSERTATION ADVISORS
  - PROFESSIONALISM
  - WORK ENVIRONMENT
  - ACCESS (TO MENTOR)
  - EXPECTATIONS
  - GUIDANCE

Student-Faculty Compact

(Adapted from the Recommendation of The Committee on Graduate Student and Faculty Issues, The Graduate Council, The Pennsylvania State University, 2009 and The Document approved by the Penn State Hershey Graduate Program Directors May 6, 2006 and updated April 22, 2010)

Purpose:

Student-Faculty Compacts are useful to encourage good communications and to enhance the working environment in student-advisor/mentor relationships. Compacts provide a basis for discussion between students and advisors/mentors regarding mutual responsibilities and future plans. "The compact serves as both a pledge and a reminder to advisors and their graduate students that their conduct in fulfilling their commitments to one another should reflect the highest professional standards and mutual respect."

Items that should be discussed by students and potential mentors before choosing a permanent laboratory:

Expectations of the Advisor towards Graduate Students in a Laboratory

1. Professionalism/Honesty/Ethics
    a. The Graduate Student will:
        i. Perform research and other educational activities conscientiously, maintain good research records and catalog and maintain all tangible research materials that result from the project.
        ii. Respect all ethical standards when conducting research including compliance with all institutional and federal regulations.
        iii. Show respect for and work collegially with co-workers, support staff and other individuals with whom the student interact.
        iv. Do the best to satisfy all project deadlines outlined by the advisor.
2. Communication
        i. Outline a defined program of research with the advisor that will include well defined goals and timelines. Organize time to meet these deadlines.
        ii. Have open and timely discussions with the advisor on a regular basis regarding the status of the research.
        iii. Seek regular feedback on performance and expect annual performance evaluations.
        iv. Understand that the student has a responsibility with the advisor to write up, in a timely manner, research findings for publication and presentation at professional meetings.

Expectations of the Graduate Students in a Laboratory of the Advisor

1. Training and Education
    a. The Advisor will:
        i. Set a mutually agreed upon set of expectations and goals at the beginning of the outset of the student's admission to the laboratory. These will be reviewed and revised periodically as the student progresses through the program.
        ii. Acknowledge that the purpose of the training that graduate students receive is to prepare them to become independent professionals.
        iii. Work to prepare students for required program examinations and committee selections.
        iv. Read the student's dissertation and other writing thoroughly and carefully and in a timely manner.
        v. Provide the student with the required guidance and mentoring as needed.
        vi. Encourage the interaction of the student with other students and faculty, both intra and extramurally and encourage attendance at professional meetings to network and to present research findings.
2. Communication
    a. The Advisor will:

i. Meet with the student periodically over the course of each academic semester and no less than once per semester to review goals and progress.
ii. Acknowledge contributions to the development of any intellectual property and define future access to tangible research materials according to institutional policy.
iii. Discuss, in advance, appropriate authorship and co-authorship roles on all relevant publications and presentations

Exiting a Student-Faculty Advising Relationship:

"On occasion, the fit may be less than either a student or a faculty advisor initially anticipated, resulting in one or the other seeking to end the relation, even though the student is making satisfactory progress based on the perspectives of all concerned. Neither party should view these situations negatively; rather they represent mid-course corrections intended to improve the student's academic and professional mentoring by faculty. The party wishing to leave the student-faculty relation should request a meeting with the other party, and possibly the student's committee, to discuss concerns and recommendations. If an alternative advisor has not been identified prior to this meeting, consideration of possible options would be appropriate. In the end, advancing the student's academic program should be the prime objective for changing advisors."

Appendix I

List of Required Integrative and Biomedical Physiology Courses for Doctoral Students
(see LionPATH for registration: (www.lionpath.psu.edu)

- **PHSIO 571. CELLULAR AND INTEGRATIVE PHYSIOLOGY I** (3) Mammalian cardiovascular, respiratory, renal, and gastrointestinal systems. Prerequisite: BIOL 472
- **PHSIO 572. CELLULAR AND INTEGRATIVE PHYSIOLOGY II** (3) Mammalian nervous, endocrine, metabolic, and reproductive systems. Prerequisite: BIOL 472
- **PHSIO 508. Critical Readings in Molecular Nutrition (1.5)** Understanding of approaches, methods and current concepts in molecular biology and nutrition through critical readings of current primary literature.
- **PHSIO 590. Physiology Colloquium (2)** Presentation skills are critical aspects of graduate level career preparation. Students will acquire critical oral communications skills and present research in a formal colloquium setting (30 min seminar).
- **PHSIO 596. INDEPENDENT STUDIES / LABORATORY ROTATIONS** (1-9 per semester) For students exploring either potential Ph.D. projects and faculty advisors or creative projects, including non-thesis research, which are supervised on an individual basis and which fall outside the scope of formal courses. Students receive a R (satisfactory/passing) or F (unsatisfactory/failing). Only R credits are counted for credit totals.
- **PHSIO 600. THESIS RESEARCH** (1-9 per semester) For students who have been matched with a faculty advisor AND have not taken/passed the comprehensive exams. Students may receive A-F grades or R/F grades at any time. By the time a student passes his/her comprehensive exam, up to 12 credits worth of PHSIO 600 are permitted to have the A-F quality grade. In the semester in which you reach 12 credits, you may need to register twice for this course (i.e. one section for any remaining A-F credits, another section for the R grade credits).
- **PHSIO 601. THESIS PREPARATION** (post comprehensive exam; 1 per semester) Each semester until graduation for those students who passed the comprehensive exam. This course appears on the transcript but does not have any grade or credit associated with it.
- **MCIBS 591. ETHICS, RIGOR, REPRODUCIBILITY AND CONDUCT OF RESEARCH IN THE LIFE SCIENCES** (2, Spring) Students exam integrity and misconduct in life sciences research, including issues of data collection, publication, authorship, and peer review. Students receive A-F quality grades.
- **NUTR 501. Regulation of Nutrient Metabolism I** (4) Integration of nutritional, biomedical, biochemical, physiological, and hormonal processes involved in carbohydrate, lipid, and protein metabolism.
- **KINES 590B. Exercise Physiology Colloquium** (1 per semester/maximum of 4) Continuing colloquia in exercise physiology which consists of individual lectures by outside speakers, students and faculty.
- **BMB 251 (audit). Cell and Molecular Biology** (2) Students will attend BMB 251 and take all exams.
- **VBSC 432/B M B 432/MICRB 432. Advanced Immunology: Signaling in the Immune System (3)** The study of signaling pathways that regulate the immune response.
- **STAT 501. Regression.**
- **STAT 502. Analysis of Variance**

Appendix II

Suggested Timeline for Doctoral and /or MS Candidates

First Year

- Required course work (fall and spring semesters)
- SARI Training
- Laboratory rotations (fall, spring semesters and possibly summer semester)
- May: Qualifying examination (for doctoral students prior to summer registration deadline)
- Selection of dissertation advisor and research topic (no later than 1st yr. summer)

Second Year

- Communications requirement (spring semester)
- Elective courses
- Appointment of dissertation committee; first meeting to review dissertation proposal (fall)
- Dissertation research (PHSIO 600 throughout year; do not use PHSIO 601)
    - Get approval of advisor and dissertation committee to have dissertation proposal serve as comprehensive exam or select two or three comprehensive exam topics for your committee to review (early spring)
- Begin Comprehensive examination preparation (late spring - summer semester)
- Complete initial IDP and attend annual working session
- Fill residency requirement of 2 semesters after candidacy (use PHSIO 601 each semester after passing the comprehensive exam)
- Master's Thesis or Non-Thesis Completion

Third Year

- November or December - first six-month committee review
    - Communications requirement (spring semester)
- May or June -second six-month committee review
    - Comprehensive examination (late spring - summer semester)
- Helpful hint: Prepare your figures, legends and tables for your dissertation in a final form as you progress. Review dissertation preparation guidelines this year
- Revise IDP and attend annual working session

Fourth and subsequent years

- November or December - six-month committee review
- May or June - six-month committee review
- Revise IDP annually and attend annual working sessions
- Preparation and defense of dissertation
    - Students are required to complete the Ph.D. program within eight years from successful completion of the qualifying exam.

Appendix III

The Huck Institutes of the Life Sciences
Integrative and Biomedical Physiology - Master of Science (MS)

Graduation Check sheet

Student Name_____
(last) (first)

PSU Student #_____

___Are there at least 30 credits?

___Does the student have at least a 3.0 GPA?

___Are there 18 credits at the 500 & 600 level?

___Are there 14 credits in courses in the major? (DO NOT count 600/610)

___If there is a minor, are there at least six credits in the minor program of _____

___Are there any missing or deferred grades?

___Have requirements been completed within 8 years of admission?

If extension granted, through what semester/year?_____

___Thesis Option
_____Are there six thesis credits (600/610)?
_____Are there no more than six thesis credits with a letter grade?
_____Has student submitted hard copy of thesis? (unbound okay)
_____1 credit PHSIO 590

____Non-Thesis Option (only by permission of Integrative and Biomedical Physiology Program Chair)
____ Has the student submitted an accepted 1st author manuscript or literature review?
____ Are there at least 18 credits in the major at the 500 level?
____ Are there 6 credits of PHSIO 596?

Initials _____

Date _____

Huck Institutes Internal Use

Appendix IV

Huck Institutes of The Life Sciences Graduate Program
Integrative and Biomedical Physiology Master's Thesis Defense Report

Candidate's Name: _____

Graduate Program: _____

Thesis Exam Date: _____ Location: _____

This is to certify that _____ appeared before the

undersigned committee on _____ and was given a Final Oral

Examination for the Master of Science degree, the results being indicated below.

Master's Thesis Exam Committee Members:

_____
_____
_____

Exam Outcome: It is agreed that the candidate:

Passed _____ unanimous decision
_____ divided decision

Failed The committee recommends that another examination:
_____ be given
_____ not be given

Evaluation of the Candidate's general scholarly attainment on the examination by each member of the committee (check one and sign your name in the space provided):

Superior □ Above Average □ Average □ Below Average □ Fail □ _____
Superior □ Above Average □ Average □ Below Average □ Fail □ _____
Superior □ Above Average □ Average □ Below Average □ Fail □ _____
Superior □ Above Average □ Average □ Below Average □ Fail □ _____

Comments (required if student failed the exam):

_____
_____
_____

Dissenting members who prefer to do so are invited to present their comments to the Program Chair(s) by letter or in person.

_____ _____

Signature of Committee Chair Date

Appendix V

GRADUATE STUDENT RESOURCE GUIDE

LionPATH (www.lionpath.psu.edu). LionPATH is Penn State's student information system, which provides students with access to their academic, registration, and financial records. Students can enroll for classes, view/accept their financial aid awards, and view their tuition bills.

Huck Graduate Student Advisory Committee (HGSAC) is a newly formed organization for support and career development for all HUCK students. https://www.huck.psu.edu/resources/students/graduate-students/graduate-student-involvement/huck-graduate-student-advisory-committee

International Student Services provides answers to questions and needs that are unique to international students. The office is located at 410 Boucke Building. http://global.psu.edu/

Graduate Student Association (GSA) is the representative body for all graduate students. The GSA addresses issues of concern to graduate students and elects members to sit on shared-governance bodies of the University. The GSA also organizes social events for graduate students. https://studentaffairs.psu.edu/involvement-student-life/student-organizations/join-student-organization

The Huck Institutes of the Life Sciences provide travel awards to Ph.D. students enrolled in all Huck graduate programs who will give poster and/or oral presentations at domestic or international conferences. To apply for this travel award, submit a request form at https://pennstate.service-now.com/sp?id=sc_cat_item&sys_id=93a9c7b9db3519103b05a961ca9619a4. The application will be sent to the Program Chair for review and approval. The maximum award for domestic travel is $750, and the maximum award for international travel is $1500. These funds may be used for transportation, lodging, and meeting registration fees; meals and per diem charges are not allowed. Students are eligible to receive the award twice during their study at Penn State (for 2 domestic or 1 domestic and 1 international meeting).

The Office of Student Aid is a good place to begin the search for financial assistance.
https://www.psu.edu/costs-aid.

The Office for Disability Services provides information and assistance to students with disabilities.
http://equity.psu.edu/student-disability-resources/

The Writing Center is sponsored by the Fox Graduate School and provides assistance to graduate students who wish to enhance their writing skills. Graduate students are invited to schedule appointments for one-on-one discussions of their writing projects. http://gwc.psu.edu/

Penn State Escort Service is operated under the auspices of Police Services and will provide an escort for students walking on campus after dark. The escort service may be reached at 5-WALK (865-9255).
https://police.psu.edu/safe-walk-service –

Off-Campus Housing opportunities are listed in 213 HUB-Robeson Center, 865-2346.
http://studentaffairs.psu.edu/offcampus/

Office of Judicial Affairs is responsible for dealing with violations of the Code of Conduct including sexual assault, harassing, stalking, and physical assault. The phone number is 863-0342.
http://studentaffairs.psu.edu/conduct/

The Code of Conduct is available at https://studentaffairs.psu.edu/support-safety-conduct/student-conduct/code-conduct

The Affirmative Action Office is committed to ensuring the University maintains an environment free of harassment and discrimination. https://affirmativeaction.psu.edu/

HUB-Robeson Center is the site for multiple student services including restaurants, a copy center, a bank (Penn State Federal Credit Union), STA Travel, a convenience store, the Penn State Bookstore, the Center for Arts and Crafts, Art Galleries, and the main information desk for the University.
http://studentaffairs.psu.edu/hub/

Counseling and Psychological Services (CAPS) can help students resolve personal concerns that may interfere with their academic progress, social development, and satisfaction at Penn State. Some of the more common concerns include difficulty with friends, roommates, or family members; depression and anxiety; sexual identity; lack of motivation or difficulty relaxing, concentrating or studying; eating disorders; sexual assault and sexual abuse recovery; and uncertainties about personal values and beliefs.
http://studentaffairs.psu.edu/counseling/

Career Services, located in the MBNA Career Services Building, is fully equipped to assist graduate students in the preparation of resumes and curriculum vitae and in developing effective interviewing skills. Career Services hosts a career fair that is open to graduate as well as undergraduate students.
http://studentaffairs.psu.edu/career/

Research Protections is the office that oversees all research on human participants, animals, radioisotopes and biohazardous materials. You must have permission from this office prior to conducting research involving any of these subjects. Permission cannot be obtained after the work has begun.
http://www.research.psu.edu/orp/

Pasquerilla Spiritual Center is home to more than fifty spiritual organizations. The center is non-denominational and provides students with opportunities to explore ethical and spiritual issues.
http://studentaffairs.psu.edu/spiritual/

Academic Integrity
Students should not "engage in or tolerate acts of falsification, misrepresentation or deception. Acts of dishonesty violate the ethical principles of the University community and compromise the worth of work completed by others". Academic dishonesty, cheating, and plagiarism are not tolerated by the University. Academic integrity violations will result in disciplinary sanctions including dismissal from the PHSIO Graduate program. Please make sure to look at the Graduate School Academic Integrity policy: https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-800/gcac-805-academic-integrity. It is the student's responsibility to understand academic integrity and it is expected they apply ethical standards to all their work. All class assignments, milestone exams and research papers and presentations should be in the student's own words.

Plagiarism
Plagiarism is often a confusing concept. At Penn State, plagiarism means taking someone's words and presenting them as your own. Cutting and pasting from a web site is considered plagiarism. Copying verbatim from any source without using quotation marks and the full reference is plagiarism. Plagiarism is a serious violation of academic integrity regardless of whether it is a homework exercise, an exam, a thesis, or a manuscript for publication.

University policies may be viewed online. Important policies include:
Sexual Harassment (AD41)
Professional Ethics (AD47)
Parking Rules (BS04)
Intellectual Property (IP01)
https://policy.psu.edu

Graduate Student Policies are available online
These include:
Grade mediation (G-10)
Resolution of problems (GCAC-802)
Termination of program (GCAC-803)
Termination of assistantship (GCAC-804)
Residency requirements (GCAC-601)
Policies for Students - J. Jeffrey and Ann Marie Fox Graduate School at Penn State

Medline
All students should be proficient in this research resource database. Through the extensive Penn State Library system https://www.libraries.psu.edu/, students can learn how to use this free on-line reference retrieval system. Contact the reference desk librarians at https://ask.libraries.psu.edu/?stream=8.

Huck Institutes Graduate Network on LinkedIn

Students are encouraged to join the Penn State Huck Institutes Graduate Network on LinkedIn: https://www.linkedin.com/groups/8278299/. This LinkedIn group is a great resource for students interested in careers in both industry and academia to network and connect with program alumni.

Appendix VI

Key Personnel Contacts

Integrative and Biomedical Physiology Program Chair
Dr. Gregory C. Shearer
110 Chandlee Laboratory
University Park, PA 16802
814-867-3040 – GCS13@PSU.EDU

Huck Institutes Associate Director for Graduate Education
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University Park, PA 16802
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Academic Program Specialist – The Huck Institutes
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