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**Integrated Biomedical  
Science  
Graduate Program**

**University of South Carolina**

**- Policies and Procedures -  
MANUAL**

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## **APPENDICES**

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COMPACT BETWEEN PROFESSOR AND STUDENT

# THE INTEGRATED BIOMEDICAL SCIENCE GRADUATE PROGRAM AT THE UNIVERSITY OF SOUTH CAROLINA

## Introduction

The Integrated Biomedical Science Graduate Program at the University of South Carolina is a cooperative program sponsored by a number of departments and schools that perform medical research at the university. At present these departments are:

University of South Carolina School of Medicine

- Department of Cell and Developmental Biology and Anatomy
- Department of Pathology, Microbiology and Immunology
- Department of Pharmacology, Physiology, and Neuroscience

University of South Carolina College of Arts and Sciences

- Department of Biology
- Department of Chemistry and Biochemistry
- Department of Psychology

University of South Carolina Arnold School of Public Health

- Department of Exercise Science

University of South Carolina College of Pharmacy

- Department of Pharmaceutical and Biomedical Sciences

This is an “umbrella” program that lasts for one year during which all students take core courses and up to three laboratory rotations. Before choosing a laboratory for their rotations, students should read the faculty research interests pages that can be found on the program web site.

After deciding on a major professor, students join the professor’s department for the remainder of their studies.

## Course of study

The course of study in this program leads to the degree of Doctor of Philosophy. The student receives extensive theoretical and practical training in the biomedical sciences. The goal of this program is to prepare students to become productive biomedical researchers and highly qualified teachers.

In the first year, students are not members of any department but are registered for classes through the School of Medicine. Their advisor is the director of the program.

During the first year, students are expected to divide their time profitably between course work and creative research in the form of up to three laboratory rotations, each of which will last

approximately half a semester. Usually, one rotation will be performed in the fall semester and two in the spring semester although students may also enter the program early (e.g. in July) to start a rotation before formal classes begin.

The first year of course work consists of the Biomedical Science core curriculum. This consists of one of two tracks:

- Cell and Molecular Biology
- Neuroscience

The first semester of either track is very similar and students may switch between tracks if their research interests change.

In most cases, PhD students receive a stipend and a tuition waiver. This is paid during the first year by the integrated program. Stipends are full-time research assistantships and it is anticipated that students will make a significant contribution to any laboratory in which they are involved. After completion of course work, the student's prime commitment is to laboratory-based dissertation research.

At any time during the first year, the student may select a major professor (mentor) and department but this must be done before July 1 (at the end of the first year). At that time, the student leaves the integrated program and joins the mentor's department. If this is before the end of the spring semester, the student continues in the core curriculum. The student is then subject to the rules and regulations of the graduate program of the major professor's department. The student's degree will be awarded by the major professor's department. Thus, for example, students joining a laboratory in the School of Medicine will, on completion of their thesis, be awarded a Doctor of Philosophy in Biomedical Science whereas students joining a laboratory in the Department of Biology will receive a Doctor of Philosophy in Biology. The PhD manuals for the constituent departments will be posted on the Integrated Biomedical Sciences Graduate program web site. The rules and regulations pertaining to a particular student will be those in force at the time the student joins the mentor's department and the student should ensure that he or she obtains a copy of the appropriate PhD manual. If the program is altered after the student is admitted, the student shall have the choice of complying with the new rules and regulations or those in force at the time of admission.

Research in biomedical science is expensive and in selecting a major professor, a student should ensure that the mentor is in a position to support both the student's stipend and research expenses.

Once students select a major professor, the student, in association with the major professor, should appoint an advisory committee. Additional specialized course work, usually taking place during the second year, is defined by the mentor, the department and the student's advisory committee.

The Director of the Integrated Biomedical Science Graduate Program will monitor and aid the progress of students through the various departmental/school programs, where appropriate, but after selecting a major professor the student should first consult the major professor concerning any difficulties and then the graduate director of the major professor's department.

# Administration

The Integrated Biomedical Science Graduate Program follows the general academic regulations of the Graduate School as described in the University of South Carolina Studies Bulletin. In addition, specific requirements of the Integrated Biomedical Science Graduate Program are described in this manual.

## 1. Program Administration

The program is administered by the Director for the Integrated Biomedical Sciences Graduate Program. The Director is also responsible for developing and maintaining the curriculum and managing admission. The Integrated Biomedical Science Graduate Program Advisory Committee consists of the director and one representative from each of the participating departments or schools. This committee is responsible for establishing policies and procedures consistent with University and School guidelines and for ensuring that program requirements are met.

The Office of Graduate Studies maintains student files and required graduate forms and is located in room 229 of Building 3 of the School of Medicine.

Director the Biomedical Graduate Program  
Program Coordinator  
Assistant Director for Student Services

Dr. Richard Hunt 733 3218  
Ansley Roberts 733-3100  
Jerel Arceneaux 733-3135

## 2. Departmental Representation

Each participating department or school selects one faculty member to serve as its representative on the Integrated Biomedical Science Graduate Program Committee. Departments and schools also have their own graduate director and committee to formulate departmental policies and to screen students for admission. The current department representatives on the integrated program committee are:

School of Medicine (Neuroscience)	Dr Lawrence Reagan
Department of Biology	Dr Alan Waldman
Department of Chemistry and Biochemistry	Dr Paul Thompson
College of Pharmacy	Dr Michael Wyatt
Department of Exercise Science	Dr James Carson
Department of Psychology	Dr Charles Mactutus

## 3. Academic Responsibility, *Carolina Community* and The Office of the Ombudsperson

The USC Student Handbook and Policy Guide, *Carolina Community*, is located at the Graduate School's website. In addition to describing aspects of student life, this publication also contains the *Carolinian Creed* and associated policy on Academic Responsibility to which all students must adhere. Students in the Integrated Biomedical Science Graduate Program are expected to adhere to the University Rules of Academic Responsibility. These rules are concerned with infractions of academic discipline or ethical conduct and prohibit plagiarism, cheating, and falsification of data.

The educational program of the university has been developed to support and encourage the collegiality and professionalism essential to an effective learning environment. Students who believe that they have been punitively assessed or mistreated because of religion, race, ethnicity, gender, sexual orientation, age or other factors have access to the school or department Ombudspersons who are empowered to receive and investigate reports of mistreatment in a completely confidential manner, to mediate between the parties involved and, in the event mediation is not successful, to make recommendations directly to the Dean of the School regarding

appropriate resolution of any complaints. The use of the Ombudspersons' services to resolve a complaint represents a form of alternate dispute resolution. For this reason the services of the Ombudsperson will no longer be available to a student once that student engages an attorney to initiate legal action against the school, the University of South Carolina, or the employees of those institutions. During the first "umbrella" year, students who wish to consult the Ombudsman should consult those in the School of Medicine. The current Ombudspersons are: Dr. Richard Goodwin, 733-3313; [goodwin@med.sc.edu](mailto:goodwin@med.sc.edu) and Dr. J. T. Thornhill, 733-3367; [jthorn@gw.med.sc.edu](mailto:jthorn@gw.med.sc.edu).

## Degree Requirements

### 1. Interim Advisor

The Director for the Integrated Biomedical Science Graduate Program will serve as interim advisor to PhD students until they have selected a major professor. The interim advisor will assist the student in the selection of a course of study and in the selection of laboratory rotations. The interim advisor will also ensure that all early requirements are met. At all stages of the student's participation in the graduate program, the interim advisor will try to ensure the smooth progress of the student through the program. A permanent graduate faculty advisor, usually the major professor, should be appointed as soon as an area of research is identified but no later than July 1 the first year.

### 2. Transfer Credits and Course Substitution for Advanced Standing

Applicants with previous graduate or medical training may request advanced standing to reduce course requirements so that the time to complete a degree is reduced. Students may be excused from repeating courses in the Integrated Biomedical Science Program when a similar graduate course has been taken elsewhere within the past three to five years. The student should consult with the Director for the Integrated Biomedical Science Graduate Program immediately after orientation so that a decision may be reached within the drop-add period of registration. Decisions regarding transfer of graduate credits as a substitution for required program core courses are decided by the Advisory Committee. Students may be asked to provide information about the course including an outline, credit hours, and required tests; in some cases, a competency exam may be recommended as a condition of course waiver. It is unlikely that transfer of credits will be allowed from colleges or universities whose standards are unknown to the faculty of the University of South Carolina. Note that USC Graduate School policy requires that all course work including transfers must be no more than eight years old when the Ph.D. degree is **awarded**. The Graduate School imposes a limit to the number of credit hours that may be transferred.

### 3. Academic Regulations

#### a. *Grades and Academic Progress*

Graduate courses may be passed for degree credit with a grade as low as C, but the student's average on all courses attempted for graduate credit must be at least B (3.0 on a 4 point system). Graduate students whose cumulative grade point average drops below **B** (3.00) will be placed on academic probation and allowed one calendar year in which to raise the grade point average to at least 3.00. Students who do not reach a cumulative 3.00 grade point average during the grace period will not be permitted to enroll for further graduate course work in that degree program. Appeals for reinstatement to degree candidacy may be made first to the Integrated Biomedical Science Graduate Program Advisory committee in the first "umbrella" year and the major professor's department committee thereafter. The appeal and the committee's recommendation will then be forwarded to the Dean of the Graduate School.

## *b. Graduate Assistantships*

The primary means of graduate student support is the Graduate Research Assistantship. Graduate Assistantships are provided to support costs of graduate education, providing a stipend for living expenses and reduced or waived tuition. The graduate assistant is considered a temporary employee of the University and is normally obligated to assigned responsibilities in supporting the research endeavors of the university. The maximum number of hours of assigned duties required per week during semesters with required course work is twenty; during summer or semesters without required coursework, the student is expected to devote full time to research.

Whereas the Program Office coordinates administrative processing of appointment forms at the start of each fiscal year, supervision of graduate assistants is delegated to the major professor or to an appointed advisor prior to selection of the major professor. Graduate Assistants are not normally expected to work during examination periods and school holidays. Other vacations are at the discretion of the major professor or the program director (before a major professor is selected). It is the responsibility of the supervisor to discuss the period of appointment, work schedule, specific duties, manner, method, and schedule of evaluation with the Graduate Assistant. Regular reviews should give feedback to the Graduate Assistant about areas of excellent performance and substandard performance which are detailed enough to make clear what results are desired.

Graduate students are expected to devote full-time effort to their studies and assistantship research responsibilities. Additional employment is therefore discouraged during terms of appointment. Students must discuss with their supervisor and obtain prior approval for any additional employment to insure that it does not interfere with academic performance. Students may request assistantship appointment for less than a 12-month period if they need time off to pursue other activities. Failure to comply with these policies is grounds for termination of assistantship support.

## *c. Teaching Assistantships and responsibilities*

The Integrated Biomedical Science Graduate Program supports all students during the first year. Some departments participating in the program have major undergraduate teaching responsibilities and all graduate students in the integrated program will be expected to participate in teaching in some way during their first year. All incoming students will attend the Graduate School's teaching assistant training program during the orientation period and will be assigned some teaching responsibilities. These will usually be the running of one or more laboratory sessions or recitations. Teaching assignments will be made by the participating departments.

## 4. Curriculum

### *a. Teaching tracks*

The annual Graduate Studies Bulletin (available at the Graduate School's website) lists, with a brief description, all graduate course offered by the University of South Carolina, arranged by graduate program and department. The Master Schedule (accessed from the Registrar's website) lists which courses are offered in a given semester, as well as meeting time, place, and instructor. In order to satisfy program requirements, the sequences below are strongly recommended for all first year students:

## MOLECULAR AND CELLULAR BIOLOGY TRACK

### SEMESTER I (FALL SEMESTER)

- BIOL 711 - Structure-Function Nucleic Acids - 3 credit hours
- BIOL 717 - Biological Chemistry - 3 credit hours
- BMSC 700 - Interdisciplinary Lab I - 1 credit hour
- BMSC 706 - Biomedical Ethics - 2 credit hours
- BMSC 801 - Seminar in Biomedical Sciences - 2 credit hours

First year students will also attend a course in which faculty will present their research interests. This will enable the selection of a major professor. They will also register for research credit for their rotations.

### SEMESTER II (SPRING SEMESTER)

- BIOL 718 - Intermediary Metabolism - 3 credit hours
- BMSC 705 - Cell Biology - 3 credit hours
- BMSC 801 - Seminar in Biomedical Sciences - 2 credit hours

Again, registration for research credit during rotations will be required.

## NEUROSCIENCE TRACK

In the first semester students are required establish their basic education in biochemistry and molecular biology. In the second semester, students participate in neurobiology basic training modules which will provide students with neuroscience-based literacy using a modular format that can accommodate training graduate students from diverse backgrounds ranging from psychology to cell & molecular biology. The five week modules (2 hrs, 30 min twice a week) provide basic literacy in neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, or molecular neuroscience, plus the needed proficiency in physiology and quantitative methods required for conducting research in neurobiology.

Students may take additional modules in their second year of training. Additional Fundamental Psychology Modules may be used to fulfill this requirement as well: Cognitive Psychology, Developmental Psychology, Learning and Motivation, Cognitive Neuroscience, Cognitive Developmental Neuroscience, Integration across areas of Psychology.

### SEMESTER I (FALL SEMESTER)

- BIOL 711 - Structure-Function Nucleic Acids - 3 credit hours
- BIOL 717 - Biological Chemistry - 3 credit hours
- PHPH 751 - Fundamental Neuroscience – x credit hours**
- BMSC 700 - Interdisciplinary Lab I - 1 credit hour
- BMSC 706 - Biomedical Ethics – 2 credit hours
- BMSC 801 - Seminar in Biomedical Sciences - 2 credit hours

First year students will also attend a course in which faculty will present their research interests. This will enable the selection of a major professor. They will also register for research credit for their rotations.

## SEMESTER II (SPRING SEMESTER)

PHPH 752- 753 - Neurobiology disease Modules  
BMSC 801 - Biomedical Seminar  
PHPH742 - Neuroscience Seminar  
BMSC 801 - Seminar in Biomedical Sciences

Again, registration for research credit during rotations will be required.

In either track, other items, such as journal clubs, may be recommended. The Biomedical Sciences Graduate Committee may recommend additional course work in special circumstances.

### *b. Discussing the Research Interests of the Faculty*

In the first semester, students are also expected to meet the faculty to familiarize themselves with the ongoing research in the biomedical sciences across the university campus. To help the student, symposia will be scheduled at the beginning of the first semester in which potential mentors will describe their research. Students should attend these symposia and may meet with potential mentors individually.

### *c. Laboratory Rotations*

A laboratory rotation will usually consist of approximately 8 weeks of research experience working with a faculty member; this may consist of a small independent project or of a component of an on-going project. A student who undertakes a laboratory rotation with a faculty member is under no obligation whatsoever to continue dissertation research with that professor. A student will start rotations in his/her first semester.

To ensure the smooth progression of the student through the program, it is a requirement that students must do one or more for-credit laboratory rotations during the first year. The student must complete Form 1 (see Appendix) identifying the chosen mentors and return it to Ms Roberts in the Graduate Office as soon as a mentor is selected. A new Form 1 detailing the planned rotation must be submitted for each rotation. The forms should also be signed by the faculty member involved.

The faculty member in whose laboratory a rotation is carried out should submit a report on the student's performance to the Graduate Office using a form that may be obtained from Ms Roberts or downloaded from the program web site.

### *d. Selection of Major Professor*

The selection of major professor is by mutual agreement and is formalized by submission of a completed "Selection of Major Professor" form to the program office (Form 2, see Appendix). The student should formally affiliate with a major professor by the end of the first year of graduate study. Failure to identify a major professor by July 1 after the student's matriculation into the program may result in suspension from the program.

It is important that the selection of a major professor be an informed decision by the student and advisor. The symposia given during the first semester by potential advisors to showcase their research interests will give students the opportunity to select faculty with whom they share an interest. Rotations allow the student and faculty to determine on a trial basis whether they can act productively in a student/mentor relationship and whether the student can commit to a specific area of research.

The choice of a major professor by a graduate student and the acceptance of the role of major professor by a faculty member are important decisions that imply a certain sense of obligation on both sides. The choice of a major professor is normally made with every intention of that being a final decision. However, it is appreciated that a student may decide that the choice was inappropriate for that student; therefore, a mechanism exists for changing the major professor. It is pointed out to the student that this is not a decision to be taken lightly. It will almost certainly delay completion of his/her degree program as it will be necessary to develop a new dissertation research program and have it approved. If a change in major professor is to be made, it should always be made prior to the point at which the student attempts the Comprehensive Examination.

In the event that a graduate student deems a change of major professor necessary, the procedures of the major professor's department will apply. The student may seek advice from the department's graduate director and/or the director of the integrated program, if necessary.

*e. Compact*

As noted above, selection of a major professor and a laboratory in which to work entails a commitment by both the student and professor and should not be entered into lightly. The student is undertaking to complete a rigorous research project in a professional manner and the professor is committing to support that project. The Graduate Directors of the American Association of Medical Colleges have drawn up a draft compact for professor and graduate student. A copy of this is attached (appendix 3). Both the student and major professor should read and agree to this compact.

# APPENDICES

**University of South Carolina  
Integrated Biomedical Science Graduate Program  
FORM1**

**PLANNED LABORATORY ROTATION**

SEMESTER: Fall . Spring

YEAR:

I, \_\_\_\_\_, plan to rotate through the laboratory of Dr.

\_\_\_\_\_

from \_\_\_\_\_ until \_\_\_\_\_

\_\_\_\_\_  
Signature of faculty member

\_\_\_\_\_  
Signature of Director for the Biomedical Sciences  
Graduate Program

**University of South Carolina  
School of Medicine  
Ph.D. in Biomedical Science Graduate Program  
FORM 2**

**SELECTION OF MAJOR PROFESSOR**

*THIS FORM SHOULD BE FILLED OUT AFTER CONSULTATION  
WITH THE MAJOR PROFESSOR.*

I, \_\_\_\_\_, wish to have Dr. \_\_\_\_\_

appointed as my major professor. I understand that on selection of my major professor, I join the major professor's department and am subject to the rules and regulations of that department's graduate program.

Signed: \_\_\_\_\_(Graduate Student)

\_\_\_\_\_(Major Professor, I hereby agree to take  
financial as well as academic responsibility)

\_\_\_\_\_(Director for the Biomedical Sciences  
Graduate Program)

# COMPACT BETWEEN AND STUDENT AND MENTOR