

University of Georgia
Department of Pharmaceutical and Biomedical Sciences

Master's (MS) Degree Program Handbook

2015/2016

Updated: 07/07/2015

Preface

The purpose of the Master's Degree Program Graduate Program Handbook is to provide information concerning the procedures and policies of graduate education within the Department of Pharmaceutical and Biomedical Sciences and the Graduate School of the University of Georgia. It supplements information contained in the Graduate School Bulletin, the UGA Graduate School website, and the PBS Departmental website. All graduate students are expected to carefully read the policy manual, retain it for future reference, and abide by it in the interest of making graduate study in the department a successful experience.

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MS Program Objectives

The PBS graduate program will provide the academic, research, and administrative resources necessary to meet the program goals:

- Give students a strong foundation in modern pharmaceutical and biomedical science disciplines and application to drug discovery and development.
- Give students depth of knowledge and technical training in their area of study.
- Develop a strong work ethic and time management skills in graduate students.
- Teach students to speak and write about their research clearly and convincingly.
- Teach students to critically evaluate data and results in the scientific literature.
- Promote a rigorous academic and research environment in which students will add to the current knowledge in their fields.
- Prepare students for a career in the biotechnology or pharmaceutical industries, or for advanced graduate or medical degrees.

Program Administration and Contacts

Graduate Program Coordinator

Dr. Shelley Hooks
shooks@rx.uga.edu
338 Pharmacy South
542-2189

Graduate Program Assistant

Ms. Demetrius Smith
dsmith@rx.uga.edu
324 Pharmacy South
542-5403

Graduate Program Committee 2015/2016

Shelley Hooks, PhD, Graduate Coordinator, Associate Professor (chair)
George Zheng, PhD, Associate Professor
Houjian Cai, PhD, Assistant Professor
Jason Zastre, PhD, Associate Professor

Who do I contact for questions or problems with...

- General graduate program issues and concerns, waivers, extensions, grievances, TA assignments, and coordinator signatures?
 - Shelley Hooks, shooks@rx.uga.edu, 542-2189
- Courses, forms, deadlines, graduate school requirements, and travel?
 - Demetrius Smith, dsmith@rx.uga.edu, 542-5403
- Departmental resources, stipends, room reservations, and items to be forwarded to the department head?
 - Joy Wilson, jwilson@rx.uga.edu, 542-7410
- Telephones, facilities, maintenance, keys, and access cards?
 - Ken Schroder, kcs@rx.uga.edu, 542-5295
- Computers and networks?
 - PBS IT helpdesk: <https://helpdesk.rx.uga.edu/>
- Office supplies and ordering?
 - Mary Eubanks, meubanks@rx.uga.edu, 542-4410
- Payroll, benefits and human resources?
 - Jessica Hart, jchart@uga.edu, 542-2147
- Fellowship and grant submissions?
 - Christian Heindel, heindel@uga.edu, 542-5291

PBS MS Graduate Admission Policies

Admission Criteria

Graduate students are admitted to the PBS department MS program based on the graduate committee's assessment of their ability to succeed in the graduate program, their compatibility with the research opportunities in the department, and the commitment of a PBS faculty member to serve as their major professor and faculty advisor. Key factors considered are: prior research experience; evidence of work ethic and commitment to biomedical research; evidence of appropriate educational background; grade point average; graduate record examination (GRE) scores; English language exam scores (for international applicants); references (particularly from laboratory supervisors); research interests of available faculty mentors; other requirements of the Graduate School and special considerations of the Departmental Graduate Program Committee. Students must identify a major professor/faculty advisor prior to admission. MS students must identify a major professor during the application process, and the major professor must agree to accept the student as an advisee prior to admission.

Change of Degree Objective

The Department of Pharmaceutical and Biomedical Sciences offers the Master of Science (MS) and Doctor of Philosophy (PhD) degrees. If after a student is initially admitted as a MS student he or she wishes to be considered as a PhD student, s/he may request a change of degree objective following one year in the program. At this time, the student's performance in coursework and research will be assessed by the admission committee. Admission to the PhD program will be determined using the same criteria applied to new PhD students. Once in the PhD program, students become eligible for departmental assistantships, but acceptance into the PhD program does not guarantee an assistantship. Departmental teaching assistantships will be awarded on a competitive basis for all new PhD students, whether newly matriculating or converting from MS.

Financial Assistance

Research Assistantships.

MS students are not eligible for departmental teaching assistantships. Faculty advisors with external funding may support MS students in their laboratories with Research Assistantships. The details of these assistantships vary based on the funding agency. Research assistants are not required to perform teaching assignments in the department.

Curriculum and Program Requirements

A. Each of the following course credits is required:

<u>Course name</u>		<u>Credits</u>	<u>Semester offered</u>
PMCY 6500/L	Drug Development I	4	Fall
PMCY 6200	Pharmaceutical Sciences II	3	Fall
PMCY 6510/L	Drug Development II	4	Spring
PMCY 6300	Medicinal Chemistry	3	Spring
PHRM 7000	Thesis Research	3+	F/S
PHRM 7300	Thesis writing	6+	F/S
PHRM 8200*	PBS Seminars	8+ _____	F/S (4 semesters)
		31 credits	

B. Two of the following three advanced core courses are required:

<u>Course name</u>		<u>Credits</u>	<u>Semester offered</u>
PHRM 8010*	Medicinal Chemistry/Structure	4	Spring
PHRM 8020*	Molecular Pharmacology	4	Fall
PHRM 8030*	Molecular Pharmaceutics	4 _____	Fall
		8 credits	

C. An additional **12 credit hours of electives** are required. At least 4 elective credit hours must be non-research courses restricted to graduate students. Electives to be included on the program of study must be approved by the student's advisory committee. Appropriate electives include:

Recommended Electives

PHRM 6910*	Introductory Toxicology	3	Fall
PHRM 8010*	Medicinal Chemistry /Structure	4	Spring
PHRM 8020*	Molecular Pharmacology	4	Fall
PHRM 8030*	Molecular Pharmaceutics	4	Fall
VPHY 6090*	Mammalian Physiology I	3	Fall
VPHY 6100*	Mammalian Physiology II	3	Spring
BCMB 6000*	Biochemistry/Molecular Bio	3	Fall
BCMB 6200	Biotechnology	3	Spring
BIOS 7010*	Introductory Biostatistics	3	F/S
PHRM 7000	Research	var	F/S
PHRM 7300	Thesis writing (additional)	var	F/S

*Non-research courses restricted to graduate students

Total required course credits:

31 core courses + 8 advanced core courses + 12 electives: 51 credit hours

Example of a typical full-time student program of study

Year 1

Fall

PMCY 6500/L	Drug Development I	4
PMCY 6200	Pharmaceutical Sciences II	3
PHRM 8200	PBS Seminar	2
	<u>Elective</u>	<u>3+</u>
	Total:	12+

Spring

PMCY 6510/L	Drug Development II	4
PMCY 6300	Medicinal Chemistry	3
PHRM 8200	PBS Seminar	2
PHRM 7000	Thesis Research	3
	<u>Elective</u>	<u>3+</u>
	Total:	15+

Year 2

Fall

PHRM 8010	Molecular Pharmaceutics	4
PHRM 8200	PBS Seminar	2
PHRM 7300	Thesis writing	3
	<u>Elective</u>	<u>3+</u>
	Total:	12+

Spring

PHRM 8030	Medicinal Chemistry/Structure	4
PHRM 8200	PBS Seminar	2
PHRM 7300	Thesis writing	3
	<u>Elective</u>	<u>3+</u>
	Total:	12+

There is no requirement that the program of study be completed within 2 years.

Committees and Advisement

Thesis Committee

Each student will form a **Thesis Advisory Committee** by the end of the first semester in the program. This committee will assess student progress through the program, approve the program of study and research prospectus, and conduct the thesis defense. The Thesis Advisory Committee consists of the major professor as chairman plus two additional faculty members. The major professor and at least one of the other members of the committee must be graduate faculty members of the Department of Pharmaceutical and Biomedical Sciences. Faculty from outside of the department are allowed, but not required. Thesis Advisory Committee members must be approved by the Graduate Coordinator and the Dean of the Graduate School. Once a thesis committee is formed, members may not be removed without their written permission.

Deadline: Each student will form a **Thesis Advisory Committee** by the end of the first semester in the program.

Advisement

Student progress in the program will be evaluated by the Thesis Advisory Committee during annual committee meetings. If more than one committee member or the major professor gives the student an “Unsatisfactory” evaluation, the student and major professor must develop a remediation plan to improve performance. For example, the remediation plan may include additional coursework, a more structured schedule in lab, and/or more frequent committee meetings. The **first committee meeting** must be held by the end of the second semester in the program. In addition to general assessment of the student’s progress in coursework and thesis research, the specific goal of the first committee meeting is to approve the preliminary Program of Study and the thesis prospectus.

Deadline: The **first committee meeting** must be held by the end of the second semester in the program, and must include approval of the preliminary program of study and thesis prospectus.

The **Final Program of Study** is an official document listing the courses for a degree program which is to be filled out on the official form by the student and Major Professor, and approved by the Thesis Advisory Committee and the UGA Graduate School.

Deadline: The **final Program of Study** must be submitted prior to scheduling the thesis defense.

Thesis Research, Writing, and Defense

The Master's thesis may be based on an independent laboratory research project or literature-based research of a novel concept, hypothesis or emerging area of pharmaceutical science. The topic of a literature-based thesis must be distinct from existing literature reviews, and the novelty of the thesis must be justified in the research prospectus.

Before the Defense

The student must meet all departmental graduation requirements prior to dissertation defense, including all coursework on the Final Program of Study, at least two annual committee meetings, and an approved thesis research prospectus. The student and/or major professor must notify the Graduate Program Assistant of the scheduled date, time and location for the thesis defense at least two weeks in advance. It is the student's responsibility to apply for graduation, perform dissertation format checks, and submit all required paperwork with the UGA Graduate School by the posted deadlines.

Forms: <http://grad.uga.edu/index.php/current-students/forms/>

Deadlines: <http://grad.uga.edu/index.php/current-students/important-dates-deadlines/>

The Thesis

The thesis is the final component of a series of academic experiences, which culminate in the awarding of the post baccalaureate degree. The thesis fulfills the following major objectives; a) it represents original scholarship; b) it demonstrates the student's ability to understand and critically evaluate the literature of the field; c) it reflects the student's mastery of appropriate laboratory and/or literature research methods and tools; and d) it shows that the student can address a major problem, arrive at successful conclusions, and report these results in a literate fashion.

Students are referred to the University of Georgia Graduate School website for details on format and procedures for submitting a thesis (<http://grad.uga.edu/index.php/current-students/policies-procedures/theses-dissertations-guidelines/theses-and-dissertations-overview/>). The student distributes copies of the thesis to the major professor, each of the Thesis Committee members, and the PBS Graduate Program Assistant's office. The candidate for a Master's degree must defend his or her thesis at the final oral examination given by the student's Major Professor and Thesis Committee no sooner than three weeks after submission of the thesis to the committee. All University faculty members are invited to attend and participate in the examination. At the conclusion of the thesis presentation, the candidate is questioned by faculty in attendance. At the end of questioning, the candidate's performance will be evaluated by the committee, and a pass or fail grade is determined. In the case of a candidate's failure, the oral exam can be re-administered at a later date. A second failure results in dismissal of the student from the graduate program. The signed forms for approval/disapproval of thesis defense are prepared and forwarded to the Graduate School. MS candidates are required to submit one bound copy of their final approved thesis to the Department.

Oral Defense of the Thesis

The final defense will consist of a seminar presentation by the candidate of his or her research topic, which is open to all members of the department and University community. This presentation will be followed by an oral examination from the faculty covering the substances of the thesis. Only the faculty may be present during this part of the examination. The Thesis Advisory Committee will determine the success or failure of the candidate and inform him or her of their decision immediately following the defense. In order for the student to pass the examination, the advisory committee must approve both the written thesis and the oral defense of the thesis. The major professor must vote to

approve the thesis and defense. If the major professor or more than one other committee member do not vote to approve either the written thesis or the oral defense, the student will have one an additional opportunity. If successful, the student is awarded a MS degree upon completion of the remaining Graduate School degree requirements. If the final written thesis or oral examination is unsatisfactory the second time, the student is dismissed.

Waivers, Extensions and Grievances:

Students may appeal to the Graduate Program Committee to have a core course requirement waived. The student must be able to document that they have previously taken and are knowledgeable in the subjects contained in the course under appeal. Appeals of first semester courses must be made, in writing, within two weeks of the student entering the graduate program.

Graduate program policies, course requirements, exam deadlines, and other program requirements are subject to well-justified requests for waivers/exemptions submitted beforehand, and to appeals submitted after a decision has been made. In the first year, before the student has a major professor, the student may submit written requests for waivers, extensions, or appeals to the graduate program committee. After a major professor and advisory committee have been formed, waiver requests initiated by either the student or the major professor should be first discussed by the advisory committee, and—if approved by the advisory committee—the request should be forwarded to the graduate committee by the major professor.

University of Georgia students have the right to appeal academic decisions. An appeal must be made within 30 days after the student receives the grade or ruling in dispute. Usually the appeal goes first to the unit responsible for the decision (for example, grades or departmental graduate program policies are appealed to the department; graduate school policies are appealed to the graduate school; university policies to the Educational Affairs Committee). An unfavorable ruling at one level is appealed to successive levels. For example, a department ruling can be appealed to the College in which the institutional unit is located; a college ruling can be appealed to the University Council Educational Affairs Committee; the Educational Affairs Committee ruling can be appealed to the President of the University; and the President's ruling can be appealed to the Board of Regents).

Academic Performance and Dismissal

University of Georgia graduate students must maintain an average of 3.0 or higher on all graduate courses taken. Grades below 3.0 are not acceptable for courses on the Program of Study, which includes all required core courses. In the first semester that the cumulative GPA falls below 3.0, students are placed on academic warning by the University of Georgia Graduate School, and are required to meet with the graduate coordinator to develop a plan to improve their academic performance. If the cumulative GPA is below 3.0 for a second consecutive semester, the student is placed on academic probation and cannot receive an assistantship stipend. If the student receives a GPA below 3.0 in any semester while on probation, they are dismissed from the Graduate School.

PBS graduate students may be dismissed from the program at the end of any semester if they have not made sufficient academic progress to warrant continuation of study, have not met their responsibilities, have not met their admittance stipulations, or have not maintained accepted standards of conduct. This would apply to: students who spend two consecutive semesters with a cumulative GPA below 3.0; students who make a "U" or a grade below a "C" in a core course; students who fail to pass the preliminary examination or the final oral examination; or ethical violations. Failure to make acceptable progress in the dissertation project may be demonstrated by unsatisfactory grades in dissertation research courses (PHRM 7000) or by more than one poor annual committee evaluation. Ethical violations that warrant dismissal from the program include but are not limited to: violation of ethical principles concerning treatment of animals; violation of ethical principles concerning teacher-student relationships; falsification of data or records; plagiarism; and academic dishonesty – including incorporation of materials into papers, theses, dissertations, etc. without appropriate attribution.

Safety and Security

The following is not a comprehensive list of safety requirements or expectations. See the various documents that are outlined in the following list for more details. *It is your responsibility to understand how to handle the chemicals and equipment associated with your research projects.*

Laboratory Safety– The University of Georgia publishes a laboratory safety manual that contains guidelines for laboratory safety, chemical storage, waste disposal and other important information. Familiarity with the fundamental concepts outlined in this document is considered essential for working in the departmental laboratories. (<http://www.esd.uga.edu/chem/pub/lsmanual.pdf>).

No Gloves in the Hallways – Laboratory workers are not to wear gloves outside the laboratory. This is a departmental policy.

Required Yearly Training – All graduate students are required to complete Right-to-Know (<http://www.esd.uga.edu/rtkcs/>) and Hazardous Materials Management Training (<http://www.esd.uga.edu/hazmat/training.htm>). These certificates must be filed with the laboratory's RTF forms. This training must be updated on a yearly basis. Additional training is necessary for specialized experiments that include the use of respirator masks, radioactive materials and radiation, and high-risk biohazards.

Waste Disposal – No hazardous wastes are to be poured down the sink drains or placed in the trash. These substances are to be placed into containers labeled “Hazardous Wastes” along with the identity of contents and % compositions (be knowledgeable of the wastes you are mixing). When these containers are full, complete the forms in CHEMATIX for pickup (<https://chematix.uga.edu/Chematix/>).

Radioactive – Radioactive compounds require a special license which requires training in proper handling and disposal procedures. These are explained in Radiation Safety Procedures of the University of Georgia. The license can be revoked if food is eaten in the laboratory. (<http://research.uga.edu/safety/radiation/>)

Biohazards – Some laboratories work with biohazards of differing degrees. It is the student's responsibility with the P.I. to understand how to properly handle biological samples. Generally, most wastes can be autoclaved then disposed of in the regular trash. (<http://research.uga.edu/biosafety/>)

Animal Use – All laboratory personnel and students are expected to comply with all Federal and University regulations related to the ethical treatment of research animals, and should not handle research animals without required training. (<http://research.uga.edu/oacu/iacuc/>)

Personal Safety – Safety glasses or goggles and laboratory coats are worn for most experiments and are required when handling hazardous materials. Appropriate laboratory attire includes low-heeled, closed-toe shoes and clothing that protects the body. Sandals, shorts, and tank tops are not allowed in the laboratories. No eating, smoking, or drinking is allowed in laboratories.

Visitation – In the interest of security, students should not admit guests to laboratory areas. Students should be aware of and abide by any restrictions concerning hazardous laboratory restrictions.

Additional Policies and Helpful Information

Graduate School Bulletin

All graduate programs at the University of Georgia are administered through and governed by the UGA Graduate School. Details of programs, policies, requirements, and procedures for graduate studies are described and annually updated in the Bulletin(<http://www.uga.edu/gradschool/bulletin/>). Students should become familiar with the current regulations, policies and schedules contained in this publication, and are responsible for meeting all requirements and deadlines for his or her degree program.

ATHENA: Schedule of Classes and Online Registration

Complete registration instructions for each semester including the list of course offerings, class dates, registration schedules, payment of fees, and drop/add policies are available on ATHENA, the online access to student information system. All students are required to consult with their major professor prior to registration for each semester. Information can be assessed and students may register for classes online at: https://sis-ssb-prod.uga.edu/PROD/twbkwbis.P_GenMenu?name=homepage

Internships – Students interested in internship opportunities should discuss opportunities with their major professor and the Graduate Coordinator. Contact information for internship programs at multiple pharmaceutical and biomedical companies and contact information of previous PBS interns and their supervisors is available. Students participating in summer internship programs must obtain prior approval of their major professor and the Graduate Coordinator. Internships are typically only approved if the student is in good academic standing and after a student is admitted into candidacy. Students are not awarded a UGA stipend during an external internship. If an internship is approved, students must notify the Graduate Program Assistant with all details (company, dates (if paid), and location).

Teaching Experience – All graduate students are given the opportunity to acquire teaching experience and assist in the teaching of professional courses. This experience provides valuable insight into the efforts required to teach a successful course. TA assignments may take the form of contact with students in the lab, lecture presentations, conduction of discussion groups, grading papers, preparing laboratory demonstrations, or any aspect of instructional activity. Students who have performed well in TA assistantships and meet UGA requirements may be given more independent teaching assignments if they wish to gain more experience. Proper attire and appearances are expected of graduate students while fulfilling their teaching obligations.

Academic and Scientific Honesty – Students in the PBS graduate program are held to the highest ethical standards. There is absolutely no place in the graduate program for academic or scientific dishonesty, including all forms of plagiarism and data falsification. Academic dishonesty is grounds for dismissal from the program. See the UGA policy on academic honesty at <http://www.uga.edu/honesty/>. Each student must become familiar with these standards and regulations, and is responsible for maintaining and adhering to the strictest standards of academic and scientific integrity and honesty.

Responsible Conduct in Research – In addition to the basic University principles and policies governing academic integrity, students engaged in scientific research have a special obligation to adhere to the highest standards of Responsible Conduct of Research. The University of Georgia

provides several courses and seminars in the Responsible Conduct of Research that meet NIH and NSF requirements for students funded by these agencies. Students may learn more about these courses and register for the seminar series at: <http://research.uga.edu/compliance-training/rcr/>

Records of Research Data – All research data obtained by graduate students should be properly recorded and dated in a standard laboratory data book. At the completion of study, students should turn in the data book to the major professor. All research data remains the property of The University of Georgia.

Leave Time – Graduate students are expected to be at work during normal hours of operation of the University throughout the calendar year. Students should notify their Major Professor of their class and work schedules, and request approval for times they will be away from campus. Graduate students do not accrue leave time.

Desk and Office Space – Incoming MS graduate students are assigned desk space in rooms 351/352 Wilson Pharmacy. Upon joining a lab, students may move to desk space assigned to their major professor and turn in their keys to room 351/352, or if no desk space is available in their new lab, students may request to keep their desk in room 351/352.

Email – Each graduate student will be given a UGA (MyID) email account. The UGA account and the graduate student listserv will be used by the Graduate Coordinator and office staff to contact you and distribute critical information. It is the student’s responsibility to check this email account daily.

Office Materials and Supplies – Supplies needed for research may be obtained from the departmental business office. The department does not furnish paper, notebooks, pads, postage, etc. for personal or class use of the graduate students.

Photocopying – Each student will be authorized for a certain number of copies each year. These are limited accounts. The departmental copy machines are restricted for the duplication of materials necessary for specific departmental assignments and to support student research.

Administrative Services – The main responsibility of departmental administrative staff is to serve the faculty. Administrative assistance is available to graduate assistants by authorization of the Department Head or major professor for work directly related to their teaching assignments.

Computers and IT support – There are several departmental computers and printers dedicated for graduate student use. Most of the computers have been connected to the college network, which may be accessed by logging in with a College of Pharmacy email username and password. New graduate students should contact the Graduate Coordinator for their College of Pharmacy email account credentials. Use of all UGA computer and/or network resources is limited by the “University of Georgia Policies on Use of Computers” (https://infosec.uga.edu/policies/documents/UGA_AUP.pdf). Please be sure to read these policies so that you understand your legal obligations. As noted, certain violations may constitute a crime, potentially resulting in prosecution. Other violations may result in disciplinary action including, but not limited to, a revocation of your network/email accounts. If you have questions regarding any of these policies, please contact the college IT staff for assistance.

Support - If you require technical assistance or have other related inquiries, you are encouraged to submit a ticket at <https://helpdesk.rx.uga.edu> (UGA MyID required). Please remember to check your ticket status for any updates or questions that our IT staff may post in response.

Departure Procedures

BEFORE departing, it is the student's responsibility to:

- 1) Submit new or forwarding contact information to PBS Graduate Program Office: email, mailing address, and Linked In accounts are all requested
- 2) Turn in keys to PBS Graduate Program Office
- 3) Insure laboratory space and equipment are cleaned and ready to be reallocated
- 4) Submit one hardbound copy of a thesis/dissertation to the Admission Counselor's Office