

Biomedical Sciences Program: Concentration in Pharmacology & Therapeutics

Overview:

The Advanced Concentration in Pharmacology & Therapeutics is one of seven concentrations leading to the PhD degree in the Graduate Program in Biomedical Sciences (BMS) at the University of Florida College of Medicine. Completion of the program requires at minimum 90 credits earned over the timespan of 12 to 18 semesters (4-6 years).

Year 1	Fall Term / Semester 1	Spring Term / Semester 2	Summer Term / Semester 3
Year 2	Fall Term / Semester 4	Spring Term / Semester 5	Summer Term / Semester 6
Year 3	Fall Term / Semester 7	Spring Term / Semester 8	Summer Term / Semester 9
Year 4	Fall Term / Semester 10	Spring Term / Semester 11	Summer Term / Semester 12
Year 5	Fall Term / Semester 13	Spring Term / Semester 14	Summer Term / Semester 15
Year 6	Fall Term / Semester 16	Spring Term / Semester 17	Summer Term / Semester 18

The curriculum in Pharmacology & Therapeutics is designed to prepare students for gainful employment in several major areas, including academic science, pharmaceutical/biotech industry, and regulatory affairs.

The student learning experience consists of laboratory rotations, mentored research, a core pharmacology course curriculum, class electives, journal clubs, seminars, and data presentations. Course work in the department emphasizes translational research with the goal to establish the pharmacological and therapeutic basis to manage disease, including neurodegenerative, psychiatric, neuromuscular, neuroendocrine, chemosensory, and oncological conditions in humans. Students learn the principals of biomedicine, such as how drugs and biological agents are discovered, optimized, function, and biodistributed in patients. In addition, courses explore the breadth of translational research in the identification of opportunities and approaches to health problems as they relate to small molecules, biologics, diagnostics, and devices.

Each semester, students will be registered into the minimum credit requirement per their standing of financial support. The first six semesters (Fall/1, Spring/2, Summer/3, Fall/4, Spring/5, Summer/6) typically consists of foundational courses along with laboratory rotations, mentored research, journal club, and seminar/data discussion.

A graduate student becomes a PhD candidate when they are granted formal admission to candidacy. Qualifying exams are taken at the beginning of the third year of graduate study (semester 7) after advanced coursework has been completed. Qualifying examinations must be completed no later than December 1 of the third year (7th semester). After a student has “qualified” and “advanced to candidacy,” registration will include Doctoral Research (GMS 7980), Journal Club (GMS 7593), and Data Discussion/Seminar (GMS 6590) along with any additional elective courses the student wishes to take. With permission from mentor and concentration coordinator, students can register for a Journal Club and/or Data Discussion/Seminar outside of their home concentration if it hosts value to their research.

Sample PhD in Medical Sciences – Pharmacology Concentration Curriculum & Example Schedule

Course code: class name (number of credits – term)

The curriculum is comprised of 90 credits:

- 5 Foundational/Core Courses (~14 credits)
- 6 Concentration Core Courses (18 credits)
- Mentored Research experience (GMS 7979 & GMS 7980)

Foundational/Core Curriculum

- **GMS 6001:** Fundamentals of Biomedical Sciences I (5 credits – Fall semester 1)
- **GMS 6003:** Essentials of Graduate Research & Professional Development (1 credit – Fall semester 1)
- **GMS 6090:** Research Rotations (2 credits – Fall semester 1; 1 credit – Spring semester 2)
- **GMS 6895:** CTS Journal Club (1 credit – Fall semester 1; 1 credit – Spring semester 2)
- **GMS 7877:** Responsible Conduct in Biomedical Research (1 credit – Spring semester 2)

Concentration Required Core Courses

- **GMS 6847:** Translational Research & Therapeutics: Bench, Bedside, Community, & Policy (3 credits – Fall only)
- **GMS 6009:** Principles of Drug Action and Therapeutics (3 credits – Spring only)
- **GMS 6560:** Molecules to Man: Past, Present and Future Therapeutics Strategies for Disease (3 credits – Spring only)
- **GMS 5905:** Special Topics: Pharmacology Grant Writing (1 credit – Summer only; prior to Fall of Qualification Exam)
- **GMS 6590:** Seminar in Pharmacology (4 X 1 Credit; Fall & Spring Semesters) *
 - *With Concentration Director approval, can substitute department seminar course with seminar in another concentration.*
- **GMS 7593:** Advances in Pharmacology Journal Club (4 X 1 Credit; Fall & Spring Semesters) *
 - *With Concentration Directory approval, can substitute department seminar course with journal club in another concentration.*

Mentored Research Experience

- **GMS 7979:** Advanced Research: Research for doctoral students BEFORE admission to candidacy.
- **GMS 7980:** Research for Doctoral Dissertation: Research for doctoral students AFTER admission to candidacy – typically Spring semester of year 2 and beyond.

Optional Electives*:

- **GMS 6051:** Signal Transduction (1 credit)
- **GMS 6053:** Cancer Biology & Therapeutics (1 credit – Odd Year Fall semester only)
- **GMS 6506:** Biologic Drug Development (1 credit)

- **GMS 6070:** Sensory and Motor Systems (3 credits – Spring only)
- **GMS 6065:** Fundamentals of Cancer Biology (3 credits – Spring only)
- **GMS 6023:** Principles of Neuroscience III: Molecular Neuropharmacology and its Clinical Application (3 credits – Spring only)

**Other relevant graduate level courses if approved by the program director. Note: Optional elective beyond credits of required courses for degree completion may be taken. Students will need to have their degree plan approved by the program coordinator before taking optional elective.*

Sample Foundational Plan

<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4 - 6</i>
<i>Fall - Semester 1</i> GMS 6001 GMS 6003 GMS 6090 GMS 6895	<i>Fall – Semester 4</i> GMS 6590 GMS 7593 GMS 7979 GMS 6847 Electives	<i>Fall – Semester 7</i> GMS 6590 GMS 7593 GMS 7979 <i>*Qualification Exam</i>	<i>Fall – Semesters 10, 13, 16</i> GMS 6590 GMS 7593 GMS 7980
<i>Spring - Semester 2</i> GMS 6895 GMS 7877 GMS 6090 GMS 6009	<i>Spring – Semester 5</i> GMS 6590 GMS 7593 GMS 7979 GMS 6560	<i>Spring – Semester 8</i> GMS 6590 GMS 7593 GMS 7980	<i>Spring - Semesters 11, 14, 17</i> GMS 6590 GMS 7593 GMS 7980
<i>Summer – Semester 3</i> GMS 7979	<i>Summer – Semester 6</i> GMS 7979 GMS 5905	<i>Summer – Semester 9</i> GMS 7980	<i>Summer – Semesters 12, 15, 18</i> GMS 7980
<i>Additional Electives as approved available each semester.</i>	<i>Additional Electives as approved available each semester.</i>	<i>Additional Electives as approved available each semester.</i>	<i>Additional Electives as approved available each semester.</i>

***The above schedule is a sample schedule and does not reflect 100% what every student going through the BMS Pharmacology & Therapeutics Concentration will register for. Some variables that can cause a change include not taking the Foundational path, selecting a mentor before three rotations, or Directly Admitting to the program. For a more in-depth overview of the curriculum please feel free to reach out to BMS Administration or the Department of Pharmacology & Therapeutics directly.**

Policy and Procedures:

Each student must identify a research mentor and potential research topics by the end of the first semester. It is recommended that the student selects a research mentor as early as possible. The research mentor will advise students on their research plans. The selection of a research mentor shall be approved by the program director.

If the student selects additional elective courses, they should be chosen with the identified research mentor and approved by the program director. In cases where a research mentor is not identified, the program director shall select the courses in discussion with the student.

Each student shall identify at least two more committee members and the primary research mentor as their thesis committee. At least one committee member must be Core Program Faculty.

Tuition & Fee Breakdown Estimate*		
Florida Resident Tuition = \$448.73/credit	Non-Resident Tuition = \$1173.45/credit	UF Standard Fees = \$81.96/credit
Florida Resident = \$530.69/credit (tuition & fees) Non-Resident = \$1255.41/credit (tuition & fees)		
9 credits at Florida Resident Tuition Rate = \$4,776.21 <small>(Graduate Assistantship credit requirement Fall & Spring)</small>	9 credits at Non-Resident Tuition Rate = \$11,298.69 <small>(Graduate Assistantship credit requirement Fall & Spring)</small>	
6 credits at Florida Resident Tuition Rate = \$3,184.14 <small>(Graduate Assistantship credit requirement Summer)</small>	6 credits at Non-Resident Tuition Rate = \$7,532.46 <small>(Graduate Assistantship credit requirement Summer)</small>	
12 credits at Florida Resident Tuition Rate = \$6,368.28 <small>(Fellowship credit requirement Fall & Spring)</small>	12 credits at Non-Resident Tuition Rate = \$15,064.92 <small>(Fellowship credit requirement Fall & Spring)</small>	
8 credits at Florida Resident Tuition Rate = \$4,245.52 <small>(Fellowship credit requirement Summer)</small>	8 credits at Non-Resident Tuition Rate = \$10,043.28 <small>(Fellowship credit requirement Summer)</small>	
90 credits at Florida Resident Tuition Rate = \$47,762.10	90 credits at Non-Resident Tuition Rate = \$112,986.90	<i>*Tuition Rates are subject to change. These are all estimate numbers based on the 2022-2023 academic year.</i>

Establishing Florida Residency

It is strongly recommended by the BMS program that all graduate assistants who are U.S. citizens, permanent resident aliens, or legal aliens granted indefinite stay by the Immigration and Naturalizations Service, take appropriate actions to become in-state residents for tuition purposes no later than the start of the fall semester of their first year in the program. To accomplish this, some actions should be taken no later than the beginning of their first semester of enrollment and no later than the end of the drop/add period for the first semester. It takes 1 year to establish residency so all Non-Florida U.S. students should start the process prior to beginning at UF.

Supply Documentation:

- Upon completion of the “Declaration of Domicile” (see below) you will need to supply documentation to prove that you have maintained 12 months physical presence in the state of Florida. This can be done by submitting the documents outlined in section IV of the Request for Change in Residency Status.

Supporting Documents:

- The Claimant must provide two or more of the following documents in support of their claim as a Florida resident for tuition purposes. At least one of the following documents, with an issue date twelve months before the admission term, must be submitted.
 - Obtain a Florida Driver’s License (original birth certificate required along with secondary identification) If you do not have a car, then obtain a Florida identification card. These can be obtained from the Florida Department of Highway Safety and Motor Vehicles Office.
 - Register to vote at the Alachua County Supervisor of Elections Office and obtain a Florida voter identification card. (You may register in whatever Florida county is appropriate for your residence).
 - Maintain a copy of your offer letter to use as proof of employment for the 12-month period.
 - If you own a vehicle, then register it in the State of Florida, by going to the Alachua County Tax Collector’s Office. If you reside in another Florida county, you may register your vehicle at the Tax Collector’s Office there.
 - Open a local bank account as this provides additional documentation that you are a permanent resident.
 - If you file your own Federal income tax return as an independent person, you need to provide a copy of the latest return you filed as documentation when you file the Request for Change in Residency Status with the Registrar’s Office.
 - If your parents or guardians claimed you as a dependent on their most recent return but are not going to claim you as a dependent on future returns, then they need to provide you with a notarized statement stating this.
- These documents may be used in conjunction with one of the required documents listed above:
 - A declaration of domicile in Florida in accordance with s.222.17, Florida Statutes
 - Florida professional or occupational license
 - Florida incorporation
 - Document evidence verifiable family ties to a Florida resident
 - Proof of membership in a Florida-based charitable or professional organization
 - Any other documentation that supports your request for resident status

- Utility bills and proof of 12 consecutive months of payments
- Lease agreement and proof of 12 consecutive months of payments
- Official state, federal or court documentation evidencing legal ties to Florida
- Notes:
 - Documents supporting the establishment of legal residence should be dated, issued, or filed at least 12 months before the first day of classes of the term for which a Florida resident classification is sought. You must be an independent person to be able to establish Florida residency unless your parents or guardians or spouse establishes residency in Florida. When filling out residency declaration of facts DO NOT LEAVE BLANKS. If something does not apply to you use “N/A” Application for Residency MUST be done prior to the term AND you must specify the term in which you are applying. You cannot apply for residency retroactively.
- TIP:
 - The more documents you can produce the better.

Submit Petition

- After you have been in Florida approximately 11.5 or 12 months (but before tuition and fees are due in the first semester in which you have been a resident of Florida for 12 months – typically fall of your second year) submit the completed Request for Change in Residency Status via secure upload at www.registrar.ufl.edu
- Students can monitor the progress of the petition at ONE.UF
- The deadline to submit the Request for Residency Change form and supporting documentation is the standard fee payment deadline for the term in which you are applying. Residency reclassification can take up to six weeks for a decision because of the evaluative process required. Residency reclassification cannot be applied retroactively to prior terms.